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POLLUTION OF THE NAVIGABLE WATERS OF DADE COUNTY, FLORIDA AND TRIBUTARIES, EMBAYMENTS AND COASTAL WATERS. PROCEEDINGS OF CONFERENCE, SECOND SESSION, HELD AT MIAMI, FLORIDA ON FEBRUARY 18-19, 1971

Environmental Protection Agency
Atlanta, Georgia

1971

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PROCEEDINGS

Second Session
Miami Florida
Feb. 18-19, 1971

CONFERENCE

In the Matter of Pollution of the Navigable Waters of Dade County, Florida, and Tributaries, Embayments and Coastal Waters

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ENVIRONMENTAL PROTECTION AGENCY

518

SECOND SESSION
OF
CONFERENCE
IN THE MATTER OF
POLLUTION OF THE NAVIGABLE WATERS
OF DADE COUNTY, FLORIDA, AND
TRIBUTARIES, EMBAYMENTS AND COASTAL WATERS

held at

Miami, Florida

February 18-19, 1971

TRANSCRIPT OF PROCEEDINGS

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The second session of a conference in the matter of pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters convened at 9:30 o'clock on February 18, 1971, in the Dade County Health Department Auditorium, Miami, Florida.

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PROCEEDINGS

OPENING STATEMENT

BY

MR. JOHN C. WHITE

MR. WHITE: The conference is open.

This second session of the conference in the matter of pollution of the navigable waters of Dade County, Florida, tributaries, embayments, and coastal waters, is being held under the provisions of Section 10 of the Federal Water Pollution Control Act, as amended.

Under the provisions of the Act, the Administrator of the Environmental Protection Agency (this authority was formerly invested in the Secretary of the Interior) is authorized to call a conference of this type when requested to do so by the Governor of a State. In a letter dated 7-21-1970 to the Honorable Walter J. Hickel, former Secretary of the Interior, former Governor Claude R. Kirk, Jr., of Florida requested that a conference be called to consider pollution of the navigable waters of Dade County, Florida. On the basis of this request, the first conference was held on October 20 through 22, 1970, in Miami.

Both the State and the Federal Governments have responsibilities in dealing with water pollution control problems. The Federal Water Pollution Control Act declares that States have primary rights and responsibilities for taking action to abate and control pollution. Consistent with this, we are charged by law to encourage the States to end these activities.

At the same time, the Administrator of the Environmental Protection Agency, is charged by law with specific responsibilities in the field of water pollution control in connection with pollution of interstate and navigable waters. The Federal Water Pollution Control Act provides that pollution of interstate or navigable waters which endangers the health or welfare of any persons shall be subject to abatement. This applies whether the amount causing or contributing to the pollution is discharged directly into such waters or reaches such waters after discharge into a tributary.

The purpose of the conference is to bring together the State water pollution control agency, representatives of the Environmental Protection Agency, and other interested parties to review the existing situation and the progress which has been made, to lay a basis for future action by all parties concerned, and to give the State, localities and industries an opportunity to take any indicated remedial action under the

State and local law.

The Florida Department of Air and Water Pollution Control will be represented by Mr. Nathaniel Reed and his designees. In this case Mr. Patton and I believe Mr. Bjarne Andersen are seated at the table with us.

The Federal conferee is Mr. Paul Traina, who is Director of the Regional Planning Office, Southeast Region, Water Quality Office of the Environmental Protection Agency.

My name is John White. I am from the Atlanta Regional Office of the Environmental Protection Agency and the representative of Mr. Ruckelshaus in these proceedings.

The parties to this conference are the official State water pollution control agency and the Environmental Protection Agency. Participation in this conference will be open to representatives and invitees of these agencies and such persons as inform me that they wish to present statements. However, only the representatives of the Florida Department of Air and Water Pollution Control and the Environmental Protection Agency constitute the conferees.

At the first conference, the conferees unanimously recommended a program for necessary action. The conclusions and recommendations of the conferees are as follows:

1. Pollution of the navigable waters in and adjacent to Dade County, Florida, including the Atlantic Ocean, Biscayne

Bay, and tributaries thereto, which endangers health and welfare of persons is occurring and is subject to abatement under the Federal Water Pollution Control Act. This pollution is caused by discharges from numerous municipal, domestic, and industrial sources within Dade County.

2. Measures taken to abate this pollution have been inadequate.

3. The nature of delays being encountered in pollution abatement are: complexity of the problem; lack of effective planning; financing, and enforcement of pollution control law; and lack of a commitment by the community to meet the pollution problem and abate it.

4. The Metropolitan Dade County Commission shall present a master plan for abatement of pollution from all sources in Dade County to the conferees, through the State of Florida, by November 1, 1971. This plan is to be in a form acceptable for certification under applicable State and Federal laws and regulations. The plan is to contain sufficient detail so that all significant sources are identified. The plan is to include a time schedule for construction with interim dates for arrangement of financing, preparation of preliminary plans and specifications, preparation of final plans and specifications, award of contracts, and initiation and operation of remedial facilities.

5. The cessation of all waste discharges into the inland canal system of Dade County, Florida, shall be accomplished as rapidly as possible but not later than January 1, 1973.

6. A minimum of secondary treatment providing at least 90 percent BOD removal and year-round chlorination of the effluent shall be provided for all waste, as required by the State of Florida before discharge to the ocean, as rapidly as possible but not later than January 1, 1974.

7. All new construction shall be connected to adequate sewage collection and treatment systems. The conferees will meet not later than February 1, 1971, to consider the question of Dade County's building permit program, with a view toward controlling additional pollution sources while the Dade County pollution abatement program is under design and construction. It is expected that the Dade County Metropolitan Commission will be prepared to present their action program to the conferees at that time which will satisfactorily meet this problem, including a program for the elimination of septic tanks in all urban areas of Dade County.

8. Additional waste discharges to Lower Biscayne Bay, including the Biscayne National Monument, and its tributaries shall be prohibited. This same prohibition shall apply to discharges to canals of Dade County which drain to the Everglades

National Park. Removal of existing municipal and industrial waste discharges from these waters shall be accomplished as rapidly as possible but not later than January 1, 1974.

9. All wastes from vessels used as domiciles or business establishments shall be discharged to onshore facilities. The Corps of Engineers is requested to report to the conferees by February 1, 1971, on its program for removing abandoned hulks, debris, and other obstructions to navigation in the Miami River.

10. An inventory of all municipal and industrial waste sources within Dade County, Florida, shall be initiated immediately by the Federal Water Quality Administration in cooperation with the State of Florida and local officials, and a report shall be made to the conferees by April 1, 1971.

11. A technical committee comprised of the Federal Water Quality Administration, the State of Florida, and the Dade County Pollution Officer shall be established to develop, in cooperation with other Federal, State, and local agencies, a regional water quality management plan for the conservation and reuse of the waters of Dade County. This committee shall report to the conferees as to its progress and future plans by November 1, 1971.

Our primary purpose for reconvening the conference today is to take into consideration Items 7, 9 and 10 of the foregoing recommendations. This does not mean that comments with respect to any other recommendation are foreclosed. The conferees will hear any information relevant to the previous conference and any new matters which may bear on the pollution of the navigable waters of Dade County.

Now a word about the procedures governing the conduct of the conference. The conferees will be called upon to make statements. The conferees, in addition, may call upon participants whom they have invited to the conference to make statements. In addition, we shall call on other interested parties or individuals who wish to present statements. At the conclusion of each statement, the conferees will be given an opportunity to comment or ask questions and I may ask a few questions also.

One point that should be made completely clear and that is that the parties to the conference are seated at this table. Everyone will be given an opportunity to have his full say. However, in order to carry out an orderly proceeding, questions or comments are not permitted from the floor. Please hold your questions or comments and when you come up to make your statements you can ask them all or make any comments that you want to make.

At the end of all the statements, we shall have a discussion among the conferees and try to arrive at a basis of agreement on the facts of the situation. Then we shall go into executive session; following which we will make a statement for the conferees on the results of the session. And as required under Federal law, another summary will be developed and promulgated by the Administrator of the Environmental Protection Agency.

A record and verbatim transcript of the conference is being made by Mrs. Virginia Rankin. This is being made for the purpose of aiding in preparing a summary and also for providing a complete record of what is said here. It usually takes three to four months for the transcript to come out in printed form. If you wish a record beforehand, you can check with Mrs. Rankin. She is an independent contractor and will make arrangements to provide you with a report on her own basis.

We shall make copies of the summary and transcript available to the official State water pollution control agency. We have generally found for the purpose of maintaining relationships with the States that people who wish summaries and transcripts should request them through their State agency rather than coming directly to the Federal Government. The reason for this is that when the conference has been concluded, we would prefer people who are interested in the problem to follow the normal relations in dealing with the State agencies rather than the Federal Government.

I would like to suggest that all speakers come to the stand and identify themselves clearly for the record and then proceed.

I would now like to call on Mr. Paul Traina to make a presentation for the Federal Government.

But very briefly before getting into this, when we scheduled this conference we did not know that the Dade County Commissioners had a meeting today and that they would want to attend. Since that time we have received a request that they be given time to make a presentation to the conferees. Consequently, we will take care of all business not relating directly to the Commissioners today, recess and reconvene tomorrow in the hearing room of the County Commission and allow their presentation and then we will go into the executive session and come up with the summary and conclusions.

I now ask Mr. Traina to make the Federal presentation.

PAUL TRAINA, DIRECTOR
REGIONAL PLANNING OFFICE, SOUTHEAST REGION
WATER QUALITY OFFICE, ENVIRONMENTAL PROTECTION AGENCY
ATLANTA, GEORGIA

MR. TRAINA: Thank you, Mr. Chairman.

Let's call on Mr. John Hagan, who is the Technical Director of our Lower Florida Estuary Project in Fort Lauderdale, to give us the status report on Recommendation No. 10 regarding the municipal industrial inventory of Dade County.

JOHN E. HAGAN, III
SANITARY ENGINEER
U.S. ENVIRONMENTAL PROTECTION AGENCY
FORT LAUDERDALE, FLORIDA

MR. HAGAN: Thank you, Mr. Traina.

Mr. Chairman, conferees.

It is my purpose today to present a status report on the waste source inventory which was required by Recommendation No. 10, and after I have made an introductory remark or two I would like to turn the program over to Mr. Larry Olinger, who has been the field operations man who has carried out most of the day-to-day activities. He will present to the conferees several reports which are available at this time.

Pursuant to Recommendation 10 of the Federal-State Enforcement Conference held in Miami, Florida, on October 20 through the 22d 1970, an inventory and survey of sources of waterborne waste is being conducted by the Water Quality Office, Environmental Protection Agency, in cooperation with State and local pollution control agencies. The conferees established April 1, 1971, as the deadline for a report on that study. That deadline will be met. It is the purpose of this interim report to inform the conferees of the progress that has been made to date.

J. E. Hagan

This study was conceived and has been executed as a cooperative study. Dade County Pollution Control has provided professional and technician level personnel, has greatly expedited field activities by their intimate knowledge of individual waste sources, and has facilitated laboratory analysis by coordinating bacteriological testing with the State Board of Health Laboratory. The State Department of Air and Water Pollution Control, working primarily through their southeast regional office in Fort Lauderdale, has provided professional personnel for both field and laboratory activities. The Water Quality Office, Division of Field Investigations, supplied professional personnel from both the Denver Center and Cincinnati Center. All field and laboratory activities were coordinated through the Lower Florida Estuary Study. It is anticipated that this highly effective working arrangement will continue throughout the remainder of this particular study and into any future activities.

The Dade County waste source inventory and study was divided into three components:

1. Major Municipal Waste Treatment Plants Study.
2. Minor Municipal Waste Treatment Plants Study.
3. Industrial Waste Source Inventory and Evaluation.

The chart which I have on the blackboard over here shows the status of the municipal plants.

Thirty-one major municipal plants were identified, inventoried and sampled. A major plant is one which meets one or more of the following criteria:

1. Has a design flow of 0.20 million gallons per day or more.
2. Serves a mixed residential and industrial area.
3. Has a history of operational problems.
4. In the judgment of the inspecting engineer would require more than a single grab sample to describe its operation.

The procedure for these plants was to collect several composite samples, each covering a 24-hour period, using mechanical sampling equipment, sampling both influent and effluent. Additional grab samples were taken for chlorine residual and coliform bacteria. Complete inventory information including a sketch of the unit arrangement was prepared.

To date, all 31 plants have been inventoried and sampled, laboratory analysis is complete, and reports have been prepared on 14 of these plants.

A summary report on this section of the study has been drafted by the Denver Center and all data are being prepared for entry into the STORET Municipal Inventory System.

Forty-six minor municipal wastewater treatment plants were identified, inventoried and sampled. A minor plant is one which treats principally a domestic or residential waste from a very restricted area such as a trailer park, shopping center or apartment house, and which in the judgment of the reviewing engineer did not require the detailed composite sampling of the major plants.

The procedure was to collect grab samples of both influent and effluent for chemical analysis. Inventory and sampling was done in one visit.

To date, all 46 plants have been inventoried and sampled and all laboratory analyses are complete. Reports have been prepared on 36 of these plants and the remaining 10 reports are in preparation. A summary report on this section is being drafted by Lower Florida Estuary Study and all data are being prepared for entry into the STORET Municipal Waste Inventory System.

Little was known of industrial wastes in Dade County when the report was prepared for the October 1970 Enforcement Conference. To prepare a thorough and complete inventory, it was necessary to start from scratch and systematically select those sources which are believed to be significant.

Industrial listings were obtained from several sources.

If you will excuse me, I will change my chart.

MR. TRAINA: Excuse me, John. Is that chart to be in the record?

MR. HAGAN: I prepared it mainly for visual aid.

We can prepare one for the record, if you wish.

MR. TRAINA: I think if you are going to refer to it you had better put it into the record.

MR. HAGAN: All right, we will prepare one for the record.

(Which said chart is as follows:)

WASTE SOURCE STUDY

DADE COUNTY, FLORIDA

STATUS AS OF FEBRUARY 18, 1971

Major Municipal Plants	31
A. Sampled	31
B. Reports	14
Minor Municipal Plants	46
A. Sampled	46
B. Reports	36
Industrial Inventory	
A. First Listing	1800
B. Potential Sources	565
C. Plants Visited	228
D. Major Industrial Waste Sources	91
1. To Sewers	38
2. To Ground Waters	37
3. To Surface Waters	16

J. E. Hagan

MR. HAGAN: Little was known of the industrial wastes in Dade County when the report was prepared for the October 1970 Enforcement Conference. To prepare a thorough and complete inventory, it was necessary to start from scratch and systematically select those sources which are believed to be significant.

Industrial listings were obtained from several sources. These initial listings contained an estimated 1,800 entries of industrial and business firms, together with their 4-digit Standard Industrial Code index.

Elimination of the SIC listings of commercial or business establishments which produce no waste process water reduced that number to 565 potential waste sources.

Telephone interviews and detailed review by industrial waste engineers resulted in the further elimination of 337 plants, leaving a list of 228 individual industries to be visited.

On-site visits to these 228 plants and the completion of an industrial waste source inventory form was the basis for eliminating 137 additional plants.

The remaining 91 industrial plants are considered to be major wastewater sources. Thirty-eight of these plants discharge their process waste to municipal sewer systems and may be of major concern to the operators of those systems. A suprisingly large number--37--discharge to ground water either through injection or through seepage or tile fields. Only 16 have direct discharge to surface waters.

Preliminary recommendations by field inspectors have been made calling for further sampling and characterization of 40 out of these 91 major waste sources.

A summary report of this section is being drafted at the Denver Center. The final report will include recommendations regarding additional industrial waste evaluation and an estimate of the resources required to do that study.

In the initial study plan of November 3, 1970, which was distributed to all the conferees, industrial waste sampling was projected. As the inventory described above progressed, it became increasingly apparent that actual sampling and chemical characterization of these wastes would not be possible within the allotted time frame. Furthermore, the complex industrial wastes which were identified are not amenable to the normal BOD, solids and coliform tests, but are toxic chemicals and metals requiring more sophisticated analysis. By late December 1970 it was decided to drop the industrial waste sampling and concentrate on defining precisely the types of industries and the resources and time frame necessary for their complete characterization.

With the exception of these changes, the study is on schedule and a final report will be available to the conferees by April 1, 1971.

Thank you. And I would like to call on--

MR. TRAINA: Can you give us an estimate as to when you will have the industrial waste inventory complete and report to the conferees?

MR. HAGAN: The industrial waste listing probably won't be finished before the middle of March.

MR. TRAINA: What about the analyses--

MR. HAGAN: I will say the 8th of March.

MR. TRAINA: The analyses, evaluations and recommendations?

MR. HAGAN: By April 1.

MR. TRAINA: They will be completed by then?

MR. HAGAN: Yes.

I would like to call on Larry Olinger now, if he will come up, to present the 14 reports on municipal plants that have been completed to date.

LAWRENCE W. OLINGER, SANITARY ENGINEER
U.S. ENVIRONMENTAL PROTECTION AGENCY
LOWER FLORIDA ESTUARY STUDY
FORT LAUDERDALE, FLORIDA

MR. OLINGER: My name is Larry Olinger. I am the project engineer for the Lower Florida Estuary Study.

I would like to read the introduction, summary and conclusions of the 14 reports that have been completely evaluated at the present time.

The first one will be Report on Waterborne Wastes from Riverdale Estates Wastewater Treatment Plant.

Introduction.

The Riverdale Estates Wastewater Treatment Plant was surveyed during the period November 29 through December 4, 1970. The plant is a complete mix activated sludge unit. The final effluent flows into Snake Creek. The Serco automatic samplers were utilized to collect five 24-hour composites of the effluent and influent. Samples of the effluent were collected at each of the two secondary clarifiers. Bacterial, temperature, pH and chlorine residual grab samples were collected from the effluent of the chlorine contact chamber. Messrs. Terry Davis of the Florida Air and Water Pollution Control Board and George Kermier of Dade County Pollution Control collected the samples. Primary contact for this plant was Mr. William Conlon of Ecological Utilities. Inc.

Summary and conclusion.

The average flow through the Riverdale Wastewater Treatment Plant was 0.36 million gallons per day during the study period. The average influent five-day biochemical oxygen demand was 456 milligrams per liter, well above the 150 milligrams per liter design criteria, and the effluent BOD_5 was 66 milligrams per liter. An average 190 pounds per day of BOD_5 were discharged to Snake Creek. Median total and fecal coliform concentrations after chlorination were both less than 18 MPN per 100 ml. The pH of the effluent averaged 4.6, which is extremely low. It is suspected that excessive chlorination was the cause of this. The average total suspended solids concentration in the effluent was 369 milligrams per liter, also higher than design, and that in the effluent was 249 milligrams per liter.

This plant does not meet the Dade County performance criteria for BOD_5 and suspended solids which requires an average removal of 90 percent with no values less than 85 percent. The average BOD_5 removal was 85.6 percent and the average total suspended solids removal was 32.6 percent. The average removal efficiency was calculated from the daily removal efficiencies.

The following are recommended to improve the operation of this plant:

1. The installation of an automatic device to improve control of chlorine dosage levels.

2. The operating criteria of this plant should be reevaluated based on higher than predicted influent concentrations.

3. Immediate modification of present operation or installation of additional treatment device to reduce the solids

level in the effluent.

(Which said report in its entirety is as follows:

Lower Florida Estuary Study
Report on Waterborne Wastes from
Riverdale Estates Waste Water Treatment Plant
(Owned by Ecological Utilities, Inc.)
3150 N. W. 208th Terrace
Miami, Dade County, Florida
January 11, 1971

INTRODUCTION

The Riverdale Estates Waste Water Treatment Plant was surveyed during the period November 29 through December 4, 1970. The plant is a complete mix activated sludge unit. The final effluent flows into Snake Creek. The Serco automatic samplers were utilized to collect five 24-hour composites of the influent and effluent. Samples of the effluent were collected at each of the two secondary clarifiers. Bacterial, temperature, pH and chlorine residual grab samples were collected from the effluent of the chlorine contact chamber. Messrs. Terry Davis and George Egermier collected the samples. Primary contact for this plant was Mr. William Conlon of Ecological Utilities, Inc.

SUMMARY AND CONCLUSION

The average flow through the Riverdale Waste Water Treatment Plant was 0.36 MGD during the study period. The average influent five-day biochemical oxygen demand (BOD_5) was 456 mg/l, well above the 150 mg/l design criteria, and the effluent BOD_5 was 66 mg/l. An average 190 lbs. per day of BOD_5 were discharged to Snake Creek. Median total and fecal coliform concentrations after chlorination were both <18 MPN per 100 ml. The pH of the effluent averaged 4.6, which is extremely low, and it is suspected that excessive chlorination was the cause of this. The average total suspended solids (TSS) concentration in the influent was 369 mg/l, also higher than design, and that in the effluent was 249 mg/l.

This plant does not meet the Dade County performance criteria for BOD_5 and suspended solids which requires an average removal of 90 percent with no values less than 85 percent. The average BOD_5 removal was 85.6% and the average total suspended solids removal was 32.6%. The average removal efficiency was calculated from the daily removal efficiencies.

The following are recommended to improve the operation of this plant:

1. The installation of an automatic device to improve control of chlorine dosage levels.

2. The operating criteria of the plant should be reevaluated based on higher than predicted influent concentrations.

3. Immediate modification of present operation or installation of additional treatment device to reduce the solids level in the effluent.

INVENTORY

Major components of the plant are:

1. Comminutor located on the east edge of aeration tank, with return sludge line entering downstream from comminutor and immediately before flow into aeration tank. There is a bar screen in parallel with the comminutor, but it was not used during the survey period. The influent stream was sampled downstream from the comminutor and upstream from entrance of the return sludge.

two mechanical aerators. It is designed to affect 95.5% BOD removal at an incoming flow of 0.875 MGD with BOD and suspended solids concentrations of 150 mg/l. These design criteria were based upon the average flow and sewage concentration for the year 1968.

3. The secondary clarifiers are designed for a continual flow of 0.87 MGD with a four-hour detention time. The north unit was formerly the primary clarifier prior to installation of the aeration unit, which replaced a trickling filter, now out of service.

4. The chlorine contact chamber is designed to provide 30 minutes detention time at 200% of the average flow.

5. The digester was not used during the survey period, as all sludge was being returned to the plant in an effort to increase suspended solids in the aeration unit.

6. Microstrainer to be installed early in 1971.

DISCUSSION OF RESULTS

The design flow of the Riverdale Estates Waste Water Treatment Plant is 0.87 MGD and the average flow during the study period was 0.36 MGD.

Extremely high chlorine residuals, averaging 6.8 mg/1, were observed during the study. Although the effluent was effectively disinfected, the average pH of the discharge, 4.6, indicates over-chlorination. The average pH of the plant influent was 7.5.

The pollutional strength of the waste was measured by the five-day biochemical oxygen demand (BOD_5), chemical oxygen demand (COD), and total organic carbon (TOC) tests. The removal efficiencies of the plant were 85.6 percent for BOD_5, 73.4 percent for COD, and 73 percent for TOC. For every test the lowest efficiency occurred on December 3, 1970, during which no settleable solids were removed by the plant. On the other days of the study, removal of settleable solids ranged from 96 to 99.5 percent and BOD_5 removal averaged 89.4 percent. However, COD and TOC removals only ranged from 74 to 86 percent. The average effluent concentrations of BOD_5, COD, and TOC were 66, 264, and 52 mg/l respectively, and the average loads of BOD_5, COD, and TOC discharge to Snake Creek were 190, 773, and 154 lbs. per day respectively.

Removal of TSS by this plant during the study was extremely poor, because on Both November 30, 1970 and December 1, 1970 higher daily average concentrations occurred in the effluent than in the influent. The following day 80% removal of TSS was accomplished, and on December 3, 1970 the removal efficiency dropped to 27%. A high priority must be given to increasing the solids removal efficiency of this plant.

The average influent BOD_5 and TSS concentrations were 456 and 369 mg/l respectively, which are well above the design concentrations of 150 mg/l for each parameter. Operating criteria of this plant should be reevaluated based upon the higher than predicted influent concentrations.

The nutrient loads, discharged to the stream, were 6 lbs. per day of ammonia nitrogen, 25 lbs. per day of organic nitrogen, 46 lbs. per day of nitrite-nitrate nitrogen and 50 lbs. per day of total phosphorus.

Field and Data Summary Sheets containing daily values are attached.

DISCUSSION OF OBSERVATIONS

General appearance of the plant is good. "Housekeeping" is adequate and mechanical maintenance appeared to be sound during the survey period. The operator is experienced in plant operation and is generally competent. There is a problem of "scum", or heavy foam, in both the aeration tank and the secondary clarifiers. This is being alleviated by a fine spray of water in the secondary clarifiers. There is some carry-over into the chlorine contact tank. However, the primary problem is the excessive chlorination in the contact chamber. There are no automatic controls on chlorine dosage, so the dosage was held at an extremely high level throughout the survey period. There is an odor of chlorine which can be detected some distance downwind from the plant. Apparently, this is standard operating procedure, as the County inspector indicated that chlorine residuals generally were high at this plant and the chlorine odor was almost always present.

LAWRENCE W. OLINGER

ROBERT L. KING

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

Sheet ___of_____

PLANT Riverdale

DATE ON		29 Nov 70	30 Nov 70	1 Dec 70	2 Dec 70	3 Dec 70	AVERAGE
TIME ON		1100	1405	1300	1200	1027	
DATE OFF		30 Nov 70	1 Dec 70	2 Dec 70	3 Dec 70	4 Dec 70	
TIME OFF		1230	1300	1200	10:27	0911	
FLOW	START	110622000	111051000	111400000	111733000	112011000	
	END	111051000	111400000	111732000	112011000	112372000	
	TOTAL	429,000	349000	333000	278000	361000	
	24 hr. Flow Rate	~~404,000~~ 380,215	365764	347478	296,533	380,835	362,171
INF.	TEMP. ~~ON~~ OFF	25.4°C	25.9°C	25.8°C	25.5°C	26.1°C	25.74
	PH ~~ON~~ OFF	7.3	7.45	7.12	7.5	8.18	7.51
EFFLUENT	TEMP ~~ON~~ OFF	24.0	23.6	22.5	23.5°C	22.2°C	23.36
	PH ~~ON~~ OFF	5.7	5.4	4.39	3.52	3.82	4.56
	Cl. Residual	5.0+	10.0−	.50−	5.0+	[illegible]	6.80
	CHLORINE-ON	−	−	−	−	−	
	CHLORINE-OFF	−	−	−	−	−	
	ON-OFF-lbs	−	−	−	−	−	

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
29 Nov 70	TurBid	O.K.	11 + 2 Activated	[illegible]ECHIER
30 Nov 70	—	O K.	345 Infl. expt. heavy solids over →	
1 Dec 70	TurBid floc, other large particles	Between 2400 to 0800 for unknown time pumps in so clarifier were stuck open	1 - no sample Influent → 4 - Heavy suspended solids - [illegible] ~~12+13 Tripped [illegible]~~ #12413 Influent tripped [illegible]	
2 Dec 70				
3 Dec 70	Eff. TurBid with floc.	O.K. 80ml →	7, 5, 11 Inf. are empty 18 inf. is partial [illegible] 24 inf. is heavy solids → ~~11 Inf. Tripped [illegible]~~	
~~3 Dec 70~~				
3 Dec 70	Eff. - Turbid with light green color, floc, small grease ~~[illegible]~~ specks + parts of heavy ~~[illegible]~~ foam in aerators →	Sewage related articles heavy surface solids in So. clarifier [illegible]	11 Inf. Tripped at 1000 hrs over No. eff. 3+5 blank So. eff. 1, 3, 5 [illegible] [illegible]	
4 Dec	floc in effluent color of light green. [illegible]	[illegible]	over	

[illegible]

30 Nov 70 So. Eff Sampler 12+14 extra Heavy Solids. 4 Thru 10 not activated. 11 is Heavy solids with 120 ML. 23 is 80 mL. 24 is 50 mL.

1 Dec 70 3, 8 + 9 samples are empty & ~~[illegible]~~ on No. Clarifier of effluent. 20 So. Eff. no sample. #13 N effluent tripped early ~~on~~ ~~it~~.

2 Dec 70 - No. Eff. { 12 + 13 Tripped at 1130.
1, 2 + 5 Empty

So. Eff. - Short samples are 14, ~~18~~, ~~17~~, ~~15~~, 20, ~~19~~, ~~21~~. ~~7~~, ~~8~~.

14 - had 60 mL.
20 - 50 mL.

3 Dec, 70 - Influent - # 4 & 3 empty #18 - ~~to~~ 120 ml

14 Inf. Heavy Solids
So. eff { 10 ~~&~~ short & ~~17~~, ~~14~~, 18. Sample 22 contains paper.
19 - 60 mL
10 - 80 mL

No. Clarifier putting large volume of water in digester.

4 Dec, 70 - Influent - #14, 15, 16, & 5 - empty
4, 1~~8~~, 24 - heavy floating material
2 & 3 - short 170 ml

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

Sheet ___ of ______

PLANT [illegible] STP

DATE - OFF		11/20/70	[illegible]	[illegible]	[illegible]	[illegible]	AVERAGE
FLOW - MGD		0.42	0.37	0.35	0.30	0.38	0.36
5 DAY B O D mg/l	INFLUENT	[illegible]	[illegible]	[illegible]	489	589	[illegible]
	EFFLUENT	[illegible]	[illegible]	43	145	42	66
	IN - OUT	370	[illegible]	[illegible]	[illegible]	547	
	% REMOVAL	87.1	[illegible]	[illegible]	70.2	92.9	85.6
	LOAD-lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C O D mg/l	INFLUENT	[illegible]	930	[illegible]	954	1039	1001
	EFFLUENT	[illegible]	[illegible]	[illegible]	483	[illegible]	[illegible]
	IN - OUT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	% REMOVAL	75.9	81.4	[illegible]	49.2	[illegible]	[illegible]
	LOAD -lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T S S mg/l	INFLUENT	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	EFFLUENT	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
	IN - OUT			[illegible]	[illegible]	[illegible]	
	% REMOVAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	LOAD- lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
V S S mg/l	INFLUENT	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
	EFFLUENT	[illegible]	[illegible]		[illegible]		[illegible]
	IN - OUT			[illegible]	[illegible]	[illegible]	
	% REMOVAL			[illegible]	[illegible]	[illegible]	60.0
	LOAD - lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Settlable Solids ml/l	INFLUENT	[illegible]	15	25	19	740	[illegible]
	EFFLUENT	.2	0.1	0.3	19	0.2	4
	IN - OUT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	% REMOVAL	[illegible]	[illegible]	[illegible]	0	[illegible]	[illegible]
T O C mg/l	INFLUENT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	EFFLUENT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52
	IN - OUT	175	[illegible]	[illegible]	[illegible]	126	
	% REMOVAL	74.5	[illegible]	[illegible]	[illegible]	[illegible]	73
	LOAD - lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

INFLUENT BOD POPULATION EQUIVALENT = [illegible]

EFFLUENT BOD POPULATION EQUIVALENT = [illegible]

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

From The Desk Of
Michael V. Polito

Sheet____ of ______

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT [illegible]

							AVERAGE or MEDIAN*
DATE - OFF		11/30/70	12/1/70	12/2/70	[illegible]	[illegible]	
FLOW - MGD		0.42	0.37	[illegible]	0.30	[illegible]	0.36
KTELDAHL NITROGEN as N	CONC.-mg/l	8.0	7.3	7.0	[illegible]	8.4	[illegible]
	LOAD-lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AMMONIA NITROGEN as N	CONC.-mg/l	[illegible]	[illegible]	3.5	1.8	2.5	1.9
	LOAD-lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ORGANIC NITROGEN as N	CONC.-mg/l	7.5	6.1	3.5	20.6	5.9	[illegible]
	LOAD-lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NO_2 -NO_3 as N	CONC.-mg/l	13.5	15.0	10.0	20.0	19.0	[illegible]
	LOAD-lbs/day	47	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL PHOSPHORUS AS P	CONC.-mg/l	15.4	15.6	15.6	[illegible]	16.5	[illegible]
	LOAD-lbs/day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CHLORIDE	CONC.-mg/l	45.0	—	42.0	44.0	40.0	[illegible]
	In Lab	—	44.0				
TOTAL COLIFORM	CONC. - MPN/100ml	18-	18-	18-	18-	18-	18-
Fecal COLIFORM	CONC. - MPN/100ml	18-	18-	18-	18-	18-	18-

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

Sheet ____ of ____

DATE OF VISIT December 1, 1970
PLANT NAME: Riverdale Estates Waste Water Treatment Plant
PLANT OWNER: Ecological Utilities, Inc.
ADDRESS N.W. Second Avenue and 200th Street, Miami
TELEPHONE 621-7311
COLLECTION SYSTEM – TYPE: Separate
OWNER: Same as Plant
ADDRESS:
TELEPHONE

DESIGN AVERAGE DESIGN FLOW: 0.875 MGD YEAR COMPLETED: 1970
STREAM FLOW cfs DURATION days FREQUENCY Yrs
CONSTRUCTION COST $205,000
POPULATION SERVED 3,500 (based on 3.5 persons per connection and 1,000 actual connections)

OPERATION ANNUAL COST $15,300
PERSONNEL One full time operator plus help from water plant operator. Lab support from Andover
LEVEL OF CERTIFICATION C
CONDITION OF EQUIPMENT Fair
OUTFALL TYPE SIZE LENGTH
DISCHARGED TO: Snake Creek Canal WATER COURSE MILEAGE:
LATITUDE LONGITUDE
TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)
Comminutor with bar screen in parallel, complete mix activated sludge unit, two secondary clarifiers in parallel, chlorine contact chamber.

SLUDGE TREATMENT Aerobic digester, not in operation

DISPOSAL Trucked to Dade County dump

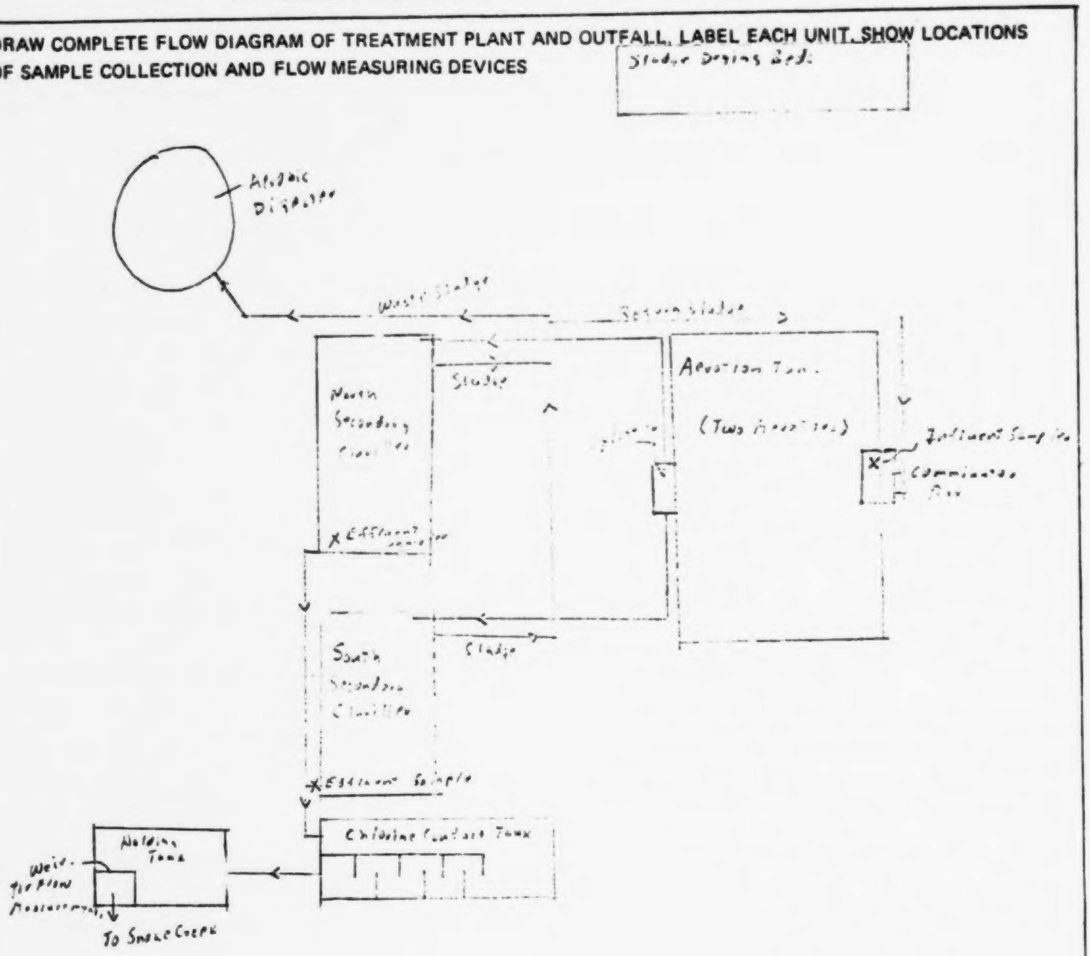
REMARKS Micro strainer to be installed early in 1970. Gross over dosing of chlorine at present.

PREPARED BY: Robert L. King

DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Riverdale Estates

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL, LABEL EACH UNIT, SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY:

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from Carol City Wastewater Treatment Plant.

The Carol City Wastewater Treatment Plant was surveyed during the period November 29 through December 4, 1970. The plant is an activated sludge unit with final discharge into the Carol City Canal. Contacts were Mr. Ernest Colson, Chief Plant Operator, and Maurice A. Sholar of Ray L. Hart & Associates, the engineering consultant for the plant.

Summary and conclusions.

An average flow through the Carol City Wastewater Treatment Plant of 2.03 MGD was measured during the study period. The average five-day biochemical oxygen demand of the influent and effluent were 164 and 30.7 milligrams per liter respectively. An average BOD_5 of 520 pounds per day was discharged to the Carol City Canal. The average influent total suspended solids concentration was 146 milligrams per liter and an average loading of 955 pounds per day was discharged at an average concentration of 56 milligrams per liter. Most of the time the effluent was effectively chlorinated, but on November 30, 1970, extremely high bacterial concentrations were evident.

Based on the high BOD_5 removal efficiency calculated on December 1, 1970, and the relatively constant influent concentration and the large variation in daily removal efficiencies, improved operation of this plant could produce a high quality effluent.

This plant is not meeting the Dade County performance criteria for BOD_5 or total suspended solids, which requires an average removal efficiency of 90 percent with no values less than 85 percent. The average BOD_5 removal efficiency was 82.5 percent during the study and that for total suspended solids was 71.2 percent. The average removal efficiency was calculated from the daily removal efficiencies.

The following are recommended to improve plant operation:

1. The stabilization of operating procedure, with use of more extensive laboratory data as a basis for making changes to planned operation.

2. Modification of the outfall to eliminate foaming.

3. The installation of chlorine dosing controls to insure effective chlorination.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from Carol City Waste Water Treatment Plant

(Owned by Carol City Utilities, Inc.)
3801 N.W. 181st Street
Carol City, Dade County, Florida
January 7, 1971

INTRODUCTION

The Carol City Waste Water Treatment Plant was surveyed during the period November 29 through December 4, 1970. The plant is an activated sludge unit with final discharge into the Carol City Canal. Serco automatic samplers were utilized to collect five 24-hour composites of the influent and effluent, before chlorination. Daily grab samples were taken after chlorination, for chlorine demand, pH, and total and fecal coliform. Messrs. Terry Davis and George Egermier collected the samples. Contacts were Mr. Ernest Colson, Chief Plant Operator, and Maurice A. Sholar of Ray L. Hart & Associates, the engineering consultant for the plant.

SUMMARY AND CONCLUSIONS

An average flow through the Carol City Waste Water Treatment Plant of 2.03 MGD was measured during the study period. The average five-day biochemical oxygen demand (BOD_5) of the influent and effluent were 164 and 30.7 mg/l respectively. An average BOD_5 of 520 lbs. per day was

... 2

discharged to the Carol City Canal. The average influent total suspended solids concentration was 146 mg/l and an average loading of 955 lbs. per day was discharged at an average concentration of 56 mg/l. Most of the time the effluent was effectively chlorinated, but on November 30, 1970 extremely high bacterial concentrations were evident.

Based on the high BOD_5 removal efficiency calculated on December 1, 1970, the relatively constant influent concentration, and the large variation in daily removal efficiencies, improved operation of this plant could produce a higher quality effluent.

This plant does not meet the Dade County criteria for BOD_5 or total suspended solids, which requires an average removal efficiency of 90% with no values less than 85%. The average BOD_5 removal efficiency was 82.5% during the study and that for total suspended solids was 71.2%. The average removal efficiency was calculated from the daily removal efficiencies.

The following are recommended to improve plant operation:

1. The stabilization of operating procedure, with use of more extensive laboratory data as a basis for making changes in plant operation.
2. Modification of the outfall to eliminate foaming.
3. The installation of chlorine dosing controls to insure effective chlorination.

...3

4. Modifications in the operation of the clarifiers to increase the removal of solids or the installation of additional devices to reduce solids in the plant effluent.

INVENTORY

Specific design criterion were not available for this plant, as it was constructed in 1959 and the engineering consultant presently employed was not the designing firm. Major components are:

1. Comminutor in the basement of the laboratory-office building, which is located between the primary and secondary digesters. The influent sampling position was located upstream from the comminutor.
2. Grit chamber, which was not in operation during the first day of sampling.
3. Three-cell primary clarifier.
4. Three-cell aeration unit with four mechanical aerators in each cell. At present only three of the aerators in each cell are operated at any one time. The operators have found that this provides sufficient D.O., and reduces the problem of foaming.
5. Three-cell secondary clarifier. The present practice is to return 97% of the activated sludge to the aeration units.
6. Chlorine contact chamber, with outfall to the Carol City Canal.
7. Two stage aerobic digester with sludge disposal accomplished by hauling liquid sludge to a County dump.

... 4

DISCUSSION OF RESULTS

The average flow during the study period was 2.03 MGD, which is well under the 3.5 MGD design flow for this plant. The average total chlorine residual during the study was 4.0 mg/l and disinfection of the effluent was generally effective. However, on November 30, 1970 extremely high concentrations of total coliform, 2,400,000 MPN per 100 ml., and fecal coliform, 790,000 MPN per 100 ml., were observed.

The pollutional strength of the discharge and the efficiency of the plant were determined by the five-day biochemical oxygen demand (BOD_5), chemical oxygen demand (COD) and the total organic carbon (TOC) tests. The average BOD_5 of the effluent was 30.7 mg/l and an average of 520 lbs. per day were discharged to the Carol City Canal. The removal efficiencies of BOD_5 varied from 73.5 to $>$97.3% for an average of 82.5%. Since the influent concentrations were relatively constant this variation reinforces the observation that plant operation is erratic. The average removals of COD and TOC were 78.4 and 49.1 percent respectively.

The average removal of total suspended solids (TSS) was 71.2 percent with three values in the 60% range and one at 91.5%. The average quantity of TSS in the effluent was 56 mg/l or 955 lbs. per day. The plant is extremely efficient in removing settleable solids, since on the average 99.3% were removed.

Significant quantities of nutrients are discharged by this plant, principally in the form of ammonia nitrogen, 296 lbs. per day, and total phosphorus, 154 lbs. per day.

Daily values of the data collected during the study are presented in the attached Field and Data Summary Sheets.

... 5

DISCUSSION OF OBSERVATIONS

General appearance of the plant is fair. "Housekeeping" could be improved, and mechanical maintenance appeared to be somewhat erratic. Various maintenance projects were in progress during the survey, but there seemed to be no organization or follow-through in completion of these programs. The Chief Operator appears to be extremely conscientious, and is making an effort to improve operation of the plant. However, plant operation is erratic. There are so many changes being made that plant operation never stabilized. The grit-chamber was not in operation when the survey was begun, but was placed in operation after we questioned the operators as to why it was not operating. Pre-chlorination was being used at one time during the survey. We recommend a stabilization in operation procedure, with use of more extensive laboratory data as a basis for making changes in plant operation. The primary visual problem is that of detergent type foam at the point where chlorine is introduced and in the Carol City Canal at the effluent. The foam was extensive in the Canal. The Chief Operator stated that this has been a problem since plant operation was begun in 1959. The outfall is designed to allow free-fall of the effluent into the Canal. We recommend a modification in outfall design to reduce the problem.

ROBERT L. KING

LAWRENCE W. OLINGER

Sheet ___ of _____

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

DATE OF VISIT December 3, 1970
PLANT NAME: Carol City Utilities
PLANT OWNER: Carol City Utilities
ADDRESS 15450 N.W. 27th Avenue, Opa Locka, Florida
TELEPHONE MU 5-2431
COLLECTION SYSTEM – TYPE: Separate
OWNER: Same as above.
ADDRESS:
TELEPHONE

DESIGN AVERAGE DESIGN FLOW: 3.5 MGD YEAR COMPLETED: 1959
STREAM FLOW cfs | DURATION days FREQUENCY Yrs
CONSTRUCTION COST $1.2 million
POPULATION SERVED 4,924 connections (approximately 17,000)

OPERATION ANNUAL COST
PERSONNEL Chief operator, 2 operators, lab technician, and 3 laborers.
LEVEL OF CERTIFICATION Chief operator has C; others studying for Certification.
CONDITION OF EQUIPMENT Fair

OUTFALL TYPE SIZE LENGTH
DISCHARGED TO: Carol City Canal WATER COURSE MILEAGE:
LATITUDE LONGITUDE

TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)
Communitor, three-cell primary clarifier, three-cell aeration tank (with four mechanical agitators per cell), three-cell secondary clarifier, gas chlorination, and chlorine contact chamber.

SLUDGE TREATMENT Two stage aerobic digester.

DISPOSAL Haul liquid sludge to County Dump at 47th Avenue and 200th Street.

REMARKS Infiltration problems cause hydraulic overloading during periods of heavy precipitation. Serve the following retail establishments: 7 laundromats, 10 service stations, 9 grocery markets, and 6 restaurants.

PREPARED BY:

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

Sheet ___ of _____

PLANT Carol City

DATE ON		29 Nov, 1970	30 Nov 1970	1 Dec 70	2 Dec 70	3 Dec 70	AVERAGE
TIME ON		0857	0832	0957	0746	0842	
DATE OFF		30 Nov, 1970	1 Dec 70	2 Dec 70	3 Dec 70	4 Dec 70	
TIME OFF		0800	0957	0746	0842	0807	
FLOW	START x 100	7471121	7490866	751213 0	7530689	7551894	
	END x 100	7490486	751213 0	7530689	755 1894	7571892	
	TOTAL x 100	19365	21264	18559	21205	19998	
	24 hr. Flow Rate	2,020,696	2,001,318	2,043,183	2,035,680	2,051,077	2,03[illegible],728
INF.	TEMP. ~~ON~~ OFF	26.0	26.0	26.0	25.9	25.5	25.94
	PH · ~~ON~~ OFF	7.2	7.2	7.92	7.2	7.15	7.33
EFFLUENT	TEMP · ~~ON~~ OFF	25.1 °C	24.9 °C	25.0 °C	25.1 °C	24.7 °C	24.[illegible]
	PH · ~~ON~~ OFF	7.1	6.9	6.82	6.8	6.8 ~~7.15~~	6.[illegible]8
	Cl. Residual	2.5	2.5	5.0	5.0	5.0	4.0
	CHLORINE-ON	–	–	–	–	–	
	CHLORINE-OFF	–	–	–	–	–	
	ON-OFF-lbs	–	–	–	–	–	

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
29 Nov	Foam in effluent	Grit chamber being put into opr. 4 aerators off (1-3 for 2 wks (test) 1 off completely		
30 Nov	Foam in plant + canal	Grit chamber operating 5 aerators off	Effluent Influent #2 empty only #22 4½ l #1[illegible] [illegible]	[illegible]
1 Dec 70	Foam in PTL. + CANAL	4 aerators down	9, 10, 11, 12, 13, 14 + 15 only samples. Replaced Clock-Effluent	
Dec 70	~~[illegible]~~ foam in PLANT. Floc FINAL is TURBID with ~~floc~~	3 AERATORS down	3 effluent not activated	
3 Dec 70	Eff. CLEAR with IRREGULAR shaped floc + Dispersion	3 aerators down	over	
4 Dec 70	Eff fairly clear with widely dispersed, irregular shaped floc.	foam in canal growing, foam in aerators + channels. 3 AERATORS down	Inf. #10 Empty	

3 Dec Effluent - #7, 19, 16, 13 - blanks #13 tripped while setting in place
More seds ENTERING CANAL AS TIME goes ON from
START TO finish

Sheet ___ of ___

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT - DATA SUMMARY

PLANT Carol City

DATE - OFF		11/30/70	12/1/70	12/2/70	12/3/70	12/4/70	AVERAGE
FLOW - MGD		2.02	2.00	2.04	2.04	2.05	2.03
5 DAY B O D mg/l	INFLUENT	N/S	185	151	162	158	164
	EFFLUENT	45.3	< 5	40	35	28	30.7
	IN - OUT		>180	111	127	130	
	% REMOVAL		>97.3	73.5	78.5	82.3	82.5
	LOAD-lbs/day	763	83	681	595	479	520
C O D mg/l	INFLUENT	NO SAMPLE	535	477	555	[illegible]	[illegible]
	EFFLUENT	151	NO SAMPLE	133	121	[illegible]	[illegible]
	IN - OUT			339	434	[illegible]	
	% REMOVAL			71	78.2	[illegible]	78.4
	LOAD -lbs/day	2,543	—	[illegible]	2060	[illegible]	[illegible]
T S S mg/l	INFLUENT	N/S	176	124	142	140	[illegible]
	EFFLUENT	116	55	47	12	51	5[illegible]
	IN - OUT						
	% REMOVAL		68.5	61.2	91.5	63.6	71.2
	LOAD- lbs/day	1954	917	817	[illegible]	876	955
V S S mg/l	INFLUENT	N/S	N.R.	80	132	106	[illegible]
	EFFLUENT	64	46	52	11	38	[illegible]
	IN - OUT			28	121	68	
	% REMOVAL			35	92	64	63.7
	LOAD –lbs/day	1078	767	884	188	651	713
Settlable Solids ml/l	INFLUENT	N/S	13	11	15	50	11
	EFFLUENT	< .5	N/S	0.2	nil	0.0	0.2
	IN - OUT			10.8	15	5	
	% REMOVAL			98	100	100	99.3
T O C mg/l	INFLUENT	N/S	157.5	65	90	75	96.[illegible]
	EFFLUENT	35	N/S	50	32	30	[illegible]
	IN - OUT			15		45	
	% REMOVAL			23	64.4	60	[illegible].1
	LOAD - lbs/day	590		850	542	513	62[illegible]

INFLUENT BOD POPULATION EQUIVALENT = ______

EFFLUENT BOD POPULATION EQUIVALENT = ______

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

From The Desk Of
Michael V. Polite

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Sheet____ of ______

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

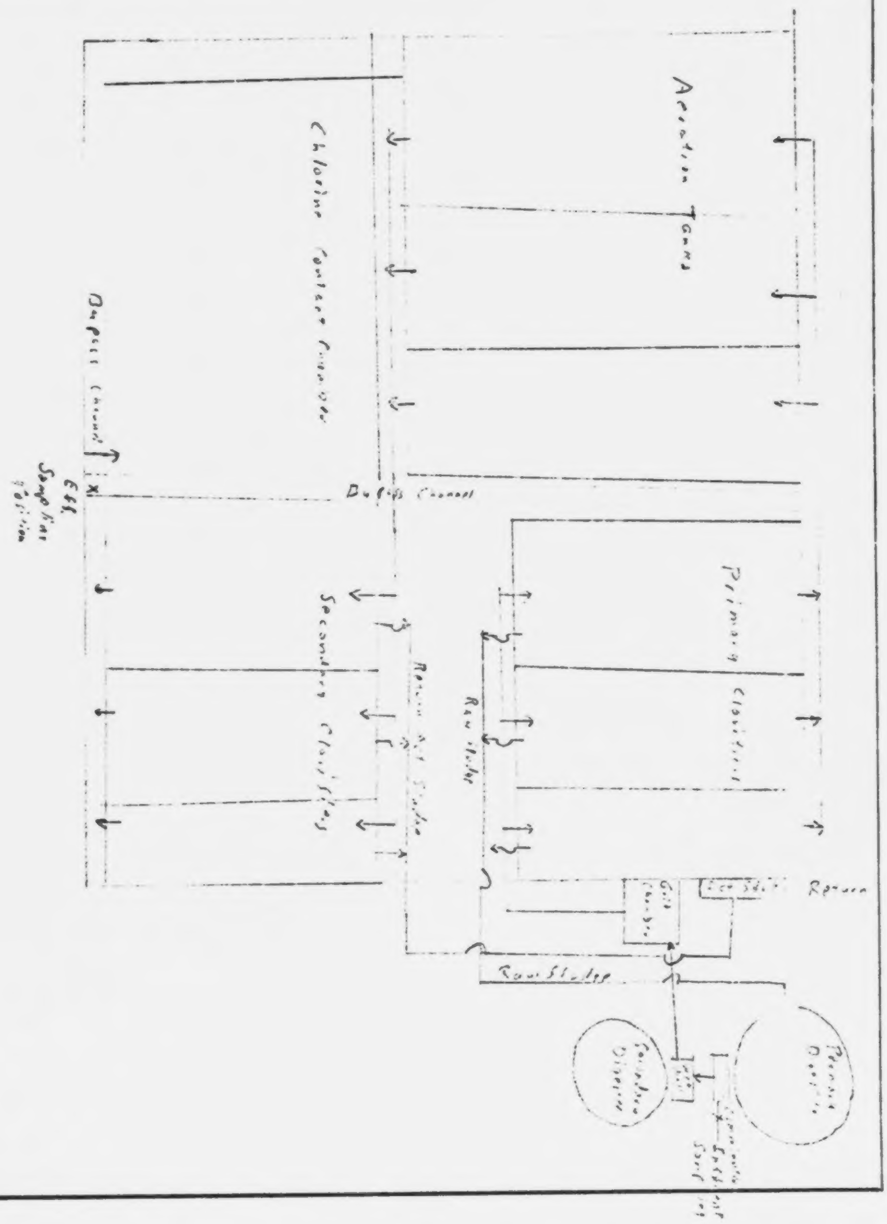
PLANT Coral City.

DATE - OFF		11/30/70	12/1/70	12/2/70	12/3/70	12/4/70	AVERAGE or MEDIAN*
FLOW - MGD		2.02	2.03	2.04	2.04	2.05	2.03
KTELDAHL NITROGEN as N	CONC.-mg/l	24.0	N/S	21.0	21.6	20.4	21.8
	LOAD-lbs/day	404	–	357	367	349	368
AMMONIA NITROGEN as N	CONC.-mg/l	19.0	N/S	17.0	17.0	16.8	17.4
	LOAD-lbs/day	320	–	289	289	287	296
ORGANIC NITROGEN as N	CONC.-mg/l	5.0	N/S	4.0	4.6	3.6	4.3
	LOAD-lbs/day	84	–	68	79	62	73
NO_2 -NO_3 as N	CONC.-mg/l	0.2	N/S	8.2	0.1	0.1	2.2
	LOAD-lbs/day	4		139	2	3	37
TOTAL PHOSPHORUS AS P	CONC.-mg/l	10.1	N/S	10.1	7.8	8.1	9.0
	LOAD-lbs/day	170		172	133	139	154
CHLORIDE	CONC.-mg/l	35.0	–	37.0	38.0	36.0	36.5
	[illegible]	–	37.0				
TOTAL COLIFORM	CONC - MPN/100ml	2,400,000	18-	18-	18-	18-	18-
Fecal COLIFORM	CONC - MPN/100ml	7[illegible],000	18-	18-	18-	18-	18-

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

LOWER [illegible] STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM
PLANT Carol City Utilities

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY:

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from Andover Wastewater Treatment Plant.

Introduction.

The Andover Wastewater Treatment Plant was surveyed during the period November 29 through December 4, 1970. Two separate complete mix activated sludge units, with individual secondary clarifiers and chlorine contact chambers, are utilized to provide secondary treatment. Combined effluent from these units is treated in a microstrainer, and the effluent flows to the Snake Creek. The primary contact for this plant and the Riverdale Estates Plant was Mr. William Conlon of Ecological Utilities, Inc.

Summary and conclusions.

The average flow through the Andover Sewage Treatment Plant was 1.71 MGD during the study period. The average concentration five-day biochemical oxygen demand of the effluent was 20 milligrams per liter and an average of 309 pounds per day of BOD_5 was discharged to Snake Creek. The average BOD_5 removal efficiency of the plant was 84 percent. An average total suspended solids removal efficiency of 83 percent was calculated during this study and the average concentration in the effluent was 17 milligrams per liter.

The median total and fecal coliform concentrations in the effluent were 20 and less than 18 MPN per 100 ml respectively.

This plant does not meet the Dade County performance criteria for BOD_5 and suspended solids which requires an average removal of 90 percent with no values less than 85 percent. On December 4, 1970, only 64.9 percent of the BOD_5 was removed. On December 2, 1970, 61 percent of the suspended solids were removed.

The following are recommended to improve the operation of this plant:

1. The flow meters should be extensively tested and repaired or replaced if they are found to malfunction.

2. The skimmings be diverted to the digester rather than the present method of returning to the aeration tanks. This would preclude concentration of the scum forming materials.

3. Operation of the microstrainer should be revised to provide a daily average of no more than 10 milligrams per liter of total suspended solids in the effluent.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Water Borne Wastes from
Andover Waste Water Treatment Plant
(Owned by Ecological Utilities, Inc.)
N.W. Second Avenue and 200th Street
Miami, Dade County, Florida
December 23, 1970

INTRODUCTION

The Andover Waste Water Treatment Plant was surveyed during the period November 29 through December 4, 1970. Two separate complete mix activated sludge units, with individual secondary clarifiers and chlorine contact chambers, are utilized to provide secondary treatment. Combined effluent from these units is treated in a microstrainer, and the effluent flows to the Snake Creek. Serco automatic samplers were utilized to collect five 24-hour composites of the common influent stream and of the effluent from the microstrainer. Bacterial, temperature, pH and chlorine residual were also collected from the microstrainer effluent. Messrs. Terry Davis and George Egermier collected the samples. The primary contact for this plant and the Riverdale Estates plant was Mr. William Conlon of Ecological Utilities, Inc.

SUMMARY AND CONCLUSIONS

The average flow through the Andover Sewage Treatment Plant was 1.71 MGD during the study period. The average concentration five-day biochemical oxygen demand (BOD_5) of the effluent was 20 mg/l and an average of 309 lbs. per day of BOD_5 was discharged to Snake Creek. The average BOD_5 removal efficiency of the plant was 84 percent. An average total suspended solids removal efficiency of 83 percent was calculated during the study and the average concentration in the effluent was 17 mg/l. The median total and fecal coliform concentrations in the effluent were 20 and >18 MPN per 100 ml respectively.

This plant does not meet the Dade County performance criteria for BOD_5 and suspended solids which requires an average removal of 90% with no values less than 85%. On December 4, 1970 only 64.9% of the BOD_5 was removed, and on December 2, 1970 only 61% of the total suspended solids were removed.

The following are recommended to improve the operation of this plant:

1. The flow meters should be extensively tested and repaired or replaced if they are found to malfunction.

2. The skimmings be diverted to the digester, rather than the present method returning to the aeration tanks. This would preclude concentration of the scum forming materials.

3. Operation of the microstrainer should be revised to provide a daily average of no more than 10 mg/l of total suspended solids in the effluent.

INVENTORY

Major components of the plant are:

1. A comminutor, with bar screen in parallel, which services aeration tanks #1 and #2, (old plant), and a similar arrangement which services aeration tank #3 (new plant). The influent sample was taken at the comminutor servicing tanks #1 and #2.

2. Three complete mix activated sludge aeration units. These units are designed for a detention time of 8.4 hours (at flow of 1.7 MGD) with a loading of 24 lbs. BOD/1000 cu. ft. and 90-93% BOD removal.

3. Six secondary clarifiers designed for detention times of 7 hours and 90% removal of suspended solids.

4. Three chlorine contact chambers designed for 30-minute detention time at 200% flow and chlorine residuals of 0.5 to 1.0 ppm.

5. A microstrainer with a 22 micron screen size, continuous rotating screen with backwash, rated at a capacity of 3 MGD and capable of providing an effluent with 10 ppm or less suspended solids over a 24-hour period.

6. Sludge treatment consisting of two stage aerobic digestion with disposal in sludge beds or by dewatering and subsequent trucking to the Dade County dump.

RESULTS

The average daily flow during the study period was 1.71 MGD. However, a study of the flow meters by the plant operators during the week of December 14, 1970 indicates the meters are inaccurate.

The total chlorine residual ranged from 0.5 mg/l to 5.0 mg/l with an average of 2.0 mg/l. The bacterial concentration indicated that the effluent was effectively chlorinated.

The automatic sampler on the influent did not function on November 30, 1970 and the effluent sampler malfunctioned on December 1, 1970. Therefore, there are only three complete sets of efficiency data.

The pollutional strength of this discharge was determined by the five-day biochemical oxygen demand, chemical oxygen demand, and total organic carbon tests. The average BOD_5 value in the effluent was 20 mg/l and the average removal accomplished by this plant was 84 percent. Removals of 91.1 and 94.4% were achieved on December 2 and 3 respectively. However, the efficiency on December 4 was only 64.9%. Based on chemical oxygen demands (COD) the average plant efficiency was 87% and the average plant efficiency based on total organic carbon (TOC) was 82.4%. The average loads of BOD_5, COD and TOC discharged to Snake Creek were 309, 813, and 219 pounds per day respectively.

The average total suspended solids concentration was 17 mg/l in the effluent and the removal efficiency was 83%.

The concentrations of ammonia, organic and nitrite-nitrate nitrogen in the effluent were 3.8, 1.8, and 10.0 mg/l as N respectively. The loads discharged to Snake Creek were 53 lbs. per day of ammonia nitrogen, 26 lbs. per day of organic nitrogen and 140 lbs. per day of nitrite-nitrate nitrogen. The average concentration of total phosphorus in the effluent was 7.6 mg/l and the load discharged was 107 lbs. per day.

The daily values for the physical, chemical and bacteriological data is presented in the attached Field and Data Summary Sheets.

DISCUSSION

General appearance of the plant is excellent. "Housekeeping" and mechanical maintenance was excellent during the survey period. The microstrainer was out of operation for approximately 3 hours, to repair the screens, over the entire sampling period. All other equipment functioned throughout the period. Overall supervision of plant operations is excellent, since the main office of Ecological Utilities, Inc., is located at the site. Laboratory facilities are on site, and serve this plant and the Riverdale Estates plant in Dade County, plus other plants located in Broward County.

One operational problem was that of scum or heavy foam, similar to that in the Riverdale Estates plant. This material carried over into the holding area for the influent into the microstrainer.

Infiltration of ground water into the collection system is a serious problem at this plant, causing hydraulic overloading at peak flows. However, the plant operators are aware of this and have partially corrected the problem.

None of the operators of this plant are certified, although the plant superintendent holds the highest certification given by New York State.

Lawrence W Olinger
LAWRENCE W. OLINGER

ROBERT L. KING

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

Sheet ___of_____

PLANT Andover

DATE ON		29 Nov 70	30 Nov 70	1 Dec 70	2 Dec 70	3 Dec 70	AVERAGE
TIME ON		10:10 A.	1030	1500	1400	1243	
DATE OFF		30 Nov 70	1 Dec 70	2 Dec 70	3 Dec 70	4 Dec 70	
TIME OFF		10:05 A.	10:06 A	1400	1243	1202	
FLOW	START X 100	WST RKS 3388374/2258879	5358851 2266391	3410642 2276220	3419824 2282154	3428842 2290296	
	END X 100	3358857/2266391	03408643 02274490	03419841 02282954	3428842 2290296	03436545 02297736	
	TOTAL X 100	10477/7512	~~10597~~ 9987/8089	9179/6734	902/7342	2523/7440	
	24 hr. Flow Rate	1,806,427	1,834,974	1,660,487	1,730,009	1,541,253	1,714,630
INF.	TEMP. ~~ON~~ OFF	26.2	~~24.2~~	26.1	26.5	26.3	26.14
	PH - ~~ON~~ OFF	8.3	~~7.1~~ 7.9	7.7	7.13	71	7.63
EFFLUENT	TEMP - ~~ON~~ OFF	24.5	24.2	23.9	24.7	24.4°C	24.34
	PH ~~ON~~ OFF	6.8	7.1	6.6	6.83	6.7	6.81
	Cl. Residual	1.0	.5	1.0	2.5	5.0	2.0
	CHLORINE-ON	765#	220 #	240	400	687	
	CHLORINE-OFF	220#	240	400	687	1127	
	ON-OFF-lbs						

Scale does not function

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO SAMPLER OPERATION	SAMPLES COLLECTED BY
29 Nov 70	NORMAL	O.K.	15, 16 + 4 Effluent Activated	Egermier
30 Nov 70	Brown Foam in Cl2 Channel NORMAL	O.K.	10 + 11 Influent Activated Eff. #7/22 ml	Changed eff. sampler Eff #1 /124 ml
1 Dec 70	Brown Foam in Cl2 Channel	Micro Strainer Down from 1130 – 1430	16 - No Sample 15 - Heavier Solids No effluent	
2 Dec 70	Normal Floating Solids on clarifiers	From 1300 - 1330 Micro Strainer down due to carryover. Digester changed to another tank	16 Inf. empty	
3 Dec 70	Clear with very light floc.	Heavy Floating Foam in new Fit. Clarifiers + Cl2 Channel	16 Inf empty	
4 Dec			#12 + 13 Influent + effluent changed at 1130	
	Clear with light vol. of Round Solids.	Low flow from 1900 - 2300	~~Eff~~ Influent	#6, 21, 22 Eff - Egry
	EAST AER. Digester down Usual Heavy floating solids on ~~east~~ New Fit Clarifiers			

30 Nov 70 - Timer Arm not Tightened

Sheet ___of_____

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

PLANT [illegible] S.T.P.

							AVERAGE
DATE - OFF		11/30/70	12/1/70	12/2/70	12/3/70	12/4/70	
FLOW - MGD		1.81	1.83	1.66	1.73	1.54	1.71
5 DAY BOD mg/l	INFLUENT	N.S.	209	169	144	134	164
	EFFLUENT	9	N/S	15	8	47	20
	IN - OUT			154	[illegible]	87	
	% REMOVAL			91.1	94.4	64.9	84
	LOAD-lbs/day			[illegible]	115	[illegible]	[illegible]
C O D mg/l	INFLUENT	NO SAMPLE	576	433	517	406	483
	EFFLUENT	132	NO SAMPLE	80	53	44	77
	IN - OUT			353	464	362	
	% REMOVAL			82	89.7	89.2	87
	LOAD -lbs/day			[illegible]	765	565	912
T S S mg/l	INFLUENT	N.S.	[illegible]	72	[illegible]		135
	EFFLUENT	20		[illegible]	5		17
	IN - OUT			44	[illegible]	127	
	% REMOVAL			61	97	91	93
	LOAD- lbs/day			[illegible]	72	167	209
V S S mg/l	INFLUENT	N/S	N.R.	[illegible]	[illegible]	[illegible]	117
	EFFLUENT	15	[illegible]	16	5	11	12
	IN - OUT			4	[illegible]	[illegible]	
	% REMOVAL			20	98	91	76
	LOAD -lbs/day			[illegible]	72	141	209
Settlable Solids ml/l	INFLUENT	N/S	13	7	10	7	9
	EFFLUENT	0.1	N/S	0.1	0.1	0.1	0.1
	IN - OUT			6.9	9.9	6.9	
	% REMOVAL			99	99	99	99
T O C mg/l	INFLUENT	N/S	52	85	120	70	82
	EFFLUENT	22	N/S	20.5	16	11	17.4
	IN - OUT			64.5	104	59	
	% REMOVAL			76	87	84.2	82.4
	LOAD - lbs/day			[illegible]	[illegible]	141	219

INFLUENT BOD POPULATION EQUIVALENT = 13,758

EFFLUENT BOD POPULATION EQUIVALENT = 1817

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

**From The Desk Of
Michael V. Polito**

Sheet___ of______

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT [illegible]

DATE - OFF		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	AVERAGE or MEDIAN*
FLOW - MGD		1.81	[illegible]	1.66	1.73	1.54	1.71
KTELDAHL NITROGEN as N	CONC.-mg/l	6.0	N/S	5.6	6.2	4.5	5.6
	LOAD-lbs/day	91	–	78	89	58	79
AMMONIA NITROGEN as N	CONC.-mg/l	4.0	N/S	4.0	4.0	3.0	3.8
	LOAD-lbs/day	60	–	55	5	[illegible]	43
ORGANIC NITROGEN as N	CONC.-mg/l	2.0	N/S	1.6	2.2	1.5	8
	LOAD-lbs/day	30	–	22	32	19	26
NO_2 -NO_3 as N	CONC.-mg/l	9.5	N/S	[illegible]	10.6	9.8	10.0
	LOAD-lbs/day	143	–	[illegible]	[illegible]	[illegible]	140
TOTAL PHOSPHORUS AS P	CONC.-mg/l	[illegible]	N/S	8.3	[illegible]	7.3	7.6
	LOAD-lbs/day	[illegible]			[illegible]	[illegible]	107
CHLORIDE	CONC.-mg/l	56.0	–	62.0	58.0	56.0	57
	[illegible]		[illegible]				
TOTAL COLIFORM	CONC - MPN/100ml	68	20	78	18-	18-	20
Fecal COLIFORM	CONC - MPN/100ml	18-	13-	20	18-	16-	18

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

MR. OLINGER: Report on Waterborne Wastes from Community Utilities Wastewater Treatment Plant.

The Community Utilities Wastewater Treatment Plant, located at 7811 Southwest 23rd Street in Coral Gables, was surveyed during the periods December 8 to 11, 1970. The total facility is composed of two activated sludge plants in parallel, with final effluent flowing into a feeder canal and subsequently into the Coral Gables Waterway. Contacts were Mr. Dean Gable and Mr. A. E. Legall of General Waterworks Corporation.

Summary and conclusions.

The average flow during the study was 2.47 MGD. The plant is hydraulically overloaded since it receives 121 percent of its designed flow. The average 5-day biochemical oxygen demand of the influent and effluent were 211 and 12 milligrams per liter respectively. The average total suspended solids (TSS) concentrations found were 200 milligrams per liter in the influent and 24 milligrams per liter in the effluent. The average chlorine residual in the effluent of this plant was 2.1 milligrams per liter and the effluent was effectively chlorinated.

The Dade County performance criteria require average BOD_5 and total suspended solids removal of 90 percent with no values less than 85 percent. This criteria was met for BOD_5 with an average removal of 94.4 percent and a minimum value of

91.1 percent. This criteria was not met for total suspended solids, since the average concentration was 87.5 percent.

It is recommended that the feeder canal receiving the effluent of this treatment plant be modified to allow proper flushing of the canal.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from Community Utilities Waste Water Treatment Plant

(Owned by General Waterworks Corporation)
1826 Ponce de Leon Boulevard
Coral Gables, Dade County, Florida
January 15, 1971

INTRODUCTION

The Community Utilities Waste Water Treatment Plant, located at 7811 S. W. 23rd Street in Coral Gables, was surveyed during the periods December 8 - 11, 1970 and December 13 - 15, 1970. The total facility is composed of two activated sludge plants in parallel, with final effluent flowing into a feeder canal and subsequently to the Coral Gables Waterway. Serco automatic samplers were utilized to collect five 24-hour composites of influent and effluent after chlorination. Daily grab samples of effluent were taken for chlorine demand, pH, and total and fecal coliform. Messrs. Terry Davis and George Egermier were sample collectors. Contacts were Mr. Dean Gable and Mr. A. E. Legall of General Waterworks Corporation.

SUMMARY AND CONCLUSIONS

The average flow during the study was 2.471 MGD. The plant is hydraulically overloaded since it receives 121% of its designed flow. The average five-day biochemical oxygen demand (BOD_5) of the influent and effluent were 211 and 12 mg/l, respectively. The average total suspended solids (TSS) concentrations found were 200 mg/l in the influent and 24 mg 1 in the effluent. The average chlorine residual in the effluent of this plant was 2.1 mg/l and the effluent was effectively disinfected.

The Dade County performance criteria require average BOD_5 and TSS concentration of 90% with no values less than 85%. This criteria was met for BOD_5 with an average removal of 94.4% and a minimum value of 91.1%. The criteria was not met for TSS, since the average concentration was 87.5%. The average values were calculated from the daily values.

It is recommended that the feeder canal receiving the effluent of this treatment plant be modified to allow proper flushing of the canal.

INVENTORY

The influent is pumped into a splitter box, from which flow is split to the two plants. Specific details of each plant are as follows:

1. Plant Number 1

   a. Comminutor.

   b. Two primary clarifiers in parallel. Raw sludge is pumped to the digester. The effluent is combined, to be split prior to entry into the activated sludge units.

   c. Two parallel three-cell activated sludge units with mechanical aeration.

   d. Flow from the activated sludge units is combined and then split again and flows through two secondary clarifiers in parallel. In the present operating mode, all activated sludge is returned from the secondary clarifiers to the aerators.

   e. Effluent from the activated sludge units is combined and flows through two chlorine contact chambers in series. No information is available on the capacity of these chambers.

f. There are no by-pass lines in this plant.

2. Plant Number 2

The influent from the splitter box flows to a comminutor, and then is again split to two primary tanks operating in parallel. From the primary clarifiers, flow is combined then re-split to flow through two activated sludge units operating in parallel. These units each have two mechanical aerators. Flow from these units is combined and re-split to flow through two secondary clarifiers operating in parallel. Sludge from the secondary clarifier is generally returned to the aeration units, but can be wholly or partially returned to the influent box for subsequent flow into the primary clarifiers. The effluent from the secondary clarifiers flows into a chlorine contact chamber, and is subsequently combined with effluent from Plant Number 1. The combined effluent is discharged into a feeder canal immediately adjacent to the Palmetto Expressway. This canal flows into the Coral Gables Waterway. The only by-pass in Plant Number 2 is one which allows by-pass of the chlorine contact chamber.

3. Digestion

There is a two stage anaerobic digester on site. However, at this time, the digesters are not in use, but are being used as a holding tank. The sludge is hauled by truck to the Virginia Key plant.

DISCUSSION OF RESULTS

The average flow at the Community Utilities Waste Water Treatment Plant was 2.471 MGD during the survey and the design flow is 2.05 MGD. The flow meter on Plant Number 2 was inoperable and flow was measured every two hours, by a plant operator, at the effluent weir of the chlorine contact chamber.

The pollutional strength of the waste was measured utilizing the five-day biochemical oxygen demand (BOD_5), chemical oxygen demand (COD), and total organic carbon (TOC) tests. The average BOD_5 of the influent and effluent were 211 and 12 mg/l, respectively. The average BOD_5 removal efficiency of this plant was 94.4% and an average of 230 lbs. per day of BOD_5 was discharged. The average removel efficiencies of COD and TOC were 92.9 and 89.7%, respectively.

The influent and effluent total suspended solids concentrations averaged 200 and 24 mg/l, respectively, and the average removal efficiency was 87.5%. This plant discharges 420 lbs. per day of volatile suspended solids and 79 pounds per day of fixed suspended solids. Settleable solids removal was 100%.

Nutrients discharged by this plant were principally in the form of ammonia nitrogen, 300 lbs. per day, and total phosphorus, 149 lbs. per day. Ninety lbs. per day of nitrite-nitrate nitrogen were also discharged.

The average chlorine residual in the effluent of this plant was 2.1 mg/l and the median total and fecal coliform concentrations both were <18 MPN per 100 ml. A high total coliform concentration of 230 MPN per 100 ml occurred in the effluent on December 15, 1970.

The daily values for all parameters are presented in the attached Field and Data Summary Sheets.

DISCUSSION OF OBSERVATIONS

The general visual appearance of the plant is poor. "Housekeeping" and maintenance is conducted strictly on an expediency basis. These conditions exist because the plant is supposed to be closed in August of 1971. In spite of the condition of the plant, the appearance of the effluent is as good as any observed over the entire program. The plant has a history of complaints of odor problems. Residences, built since the plant was put in operation, are so close to the plant that these complaints are not surprising. The plant also has a problem of hydraulic overloading at peak flow. During one visit there, flow was so great that the water level was above the skimmers in the primary tanks of Plant Number 1. This condition at times causes sewers to back up drastically. Another problem is the condition of the feeder canal. Mr. Gable informed us that a profile had been made of the bottom of the canal, and it was found that the low point in the bottom of the canal was 13 feet below water level, while the depth at the mouth of the canal was 5 feet. This condition would preclude proper flushing of the canal, causing it to act as a quasi-settling lagoon, explaining in part the degree of entrophication. In spite of these problems, the supervisor of this plant should be highly commended for operation of the plant under extremely adverse conditions.

LAWRENCE W. OLINGER

ROBERT L. KING

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT DATA SUMMARY

PLANT Community Gardens Utility

DATE - OFF		12/10 9	12/10/	12/11	12/15	12/14	AVERAGE
FLOW - MGD		2.347	2.531	[illegible]	2.553	2.534	2.471
5 DAY BOD mg/l	INFLUENT	154.1	175.3	183	327	215	210.9
	EFFLUENT	13.7	10.1	9.5	15.5	7.1	11.8
	IN - OUT			173.5			
	% REMOVAL	91.1	94.2	94.8	95.3	96.7	94.4
	LOAD-lbs/day	268	213	199	330	150	230
COD mg/l	INFLUENT	656	602	514	560	970	660.4
	EFFLUENT	44	41	41	48	53	45.4
	IN - OUT	112	561				
	% REMOVAL	93.3	93.2	92.	91.4	94.5	92.9
	LOAD -lbs/day	862	865	817	1022	1120	937
TSS mg/l	INFLUENT	176	120	248	216	240	200
	EFFLUENT	30	15	34	33	10	24.4
	IN - OUT						
	% REMOVAL	83.0	87.5	86.3	84.7	95.8	87.5
	LOAD- lbs/day	587	317	677	702	211	499
VSS mg/l	INFLUENT	128	44	236	204	236	169.6
	EFFLUENT	28	4	30	30	11	20.6
	IN - OUT						
	% REMOVAL	78.1	90.9	87.3	85.3	95.3	87.4
	LOAD –lbs/day	548	84	597	639	232	420
Settlable Solids ml/l	INFLUENT	4	6	4	740	740	14
	EFFLUENT	nil	.1	nil	0.0	0.0	nil
	IN - OUT	4		4	>40	>40	
	% REMOVAL	100	98.3	100	100	100	100
TOC mg/l	INFLUENT	82.3	130	127.3	205	220	153.0
	EFFLUENT	9.5	[illegible]	19	16	15	14.6
	IN - OUT	73					
	% REMOVAL	88.5	87.6	85.1	92.2	~~85.7~~/93.2	89.7
	LOAD - lbs/day	186	225	379	341	317	301

INFLUENT BOD POPULATION EQUIVALENT = ________

EFFLUENT BOD POPULATION EQUIVALENT = ________

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

Sheet___ of 67

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT Community Gardens

DATE - OFF		12/09	12/10	12/11	12/15	12/[illegible]	AVERAGE or MEDIAN*
FLOW - MGD		[illegible]	[illegible]	2.322	2.553	2.534	2.471
KTELDAHL NITROGEN as N	CONC.-mg/l	15.1	15.1	14.0	15.4	16.8	15.3
	LOAD-lbs/day	296	319	279	328	355	315
AMMONIA NITROGEN as N	CONC.-mg/l	[illegible]	[illegible]	14.0	14.8	15.8	14.5
	LOAD-lbs/day	[illegible]	296.	279	315	334	300
ORGANIC NITROGEN as N	CONC.-mg/l	1.1	1.1	nil	0.6	1.0	.8
	LOAD lbs/day	[illegible]	[illegible]	0	13	21	16.7
NO_2 - NO_3 as N	CONC.-mg/l	5.4	4.8	4.6	4.0	3.0	4.4
	LOAD-lbs/day	[illegible]	101	92	85	63	90
TOTAL PHOSPHORUS AS P	CONC.-mg/l	8.2	8.8	5.2	6.4	7.5	7.2
	LOAD lbs/day	161	186	104	136	159	149
CHLORIDE	CONC.-mg/l	[illegible]	46	40	51	47	46.4
TOTAL COLIFORM	CONC.-MPN/100ml	<18	45	<18	230	<18	<18
Fecal COLIFORM	CONC.-MPN/100ml	<18	<18	<18	<18	<18	<18

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

Sheet ___ of ______

DATE OF VISIT: December 10, 1970
PLANT NAME: Community Utilities
PLANT OWNER: General Waterworks Corporation
ADDRESS: 1826 Ponce de Leon Blvd., Coral Gables, Florida
TELEPHONE: 444-7311 Office - 221-3033 Plant
COLLECTION SYSTEM – TYPE: Separate
OWNER: Same as above
ADDRESS:
TELEPHONE:

DESIGN AVERAGE DESIGN FLOW: #1 - 1.05 #2 - 1.00 MGD YEAR COMPLETED: #1 - 1954 #2 - 1960
STREAM FLOW cfs | DURATION days FREQUENCY Yrs
CONSTRUCTION COST No data
POPULATION SERVED 6,240 equivalent connections (21,840)

OPERATION ANNUAL COST No data
PERSONNEL 1 supervisor, 3 operators, 2 laborers, and 2 lift station operators.
LEVEL OF CERTIFICATION Supervisor - "B", two operators have "C".
CONDITION OF EQUIPMENT Fair

OUTFALL TYPE SIZE LENGTH
DISCHARGED TO: Feeder canal to Coral Gables Waterway WATER COURSE MILEAGE:
LATITUDE LONGITUDE

TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)

Plant No. 1 - 2 primary tanks, 4 aeration units, 2 scondary clarifiers, and 2 chlorine contact chambers.

Plant No. 2 - 2 primary tanks, 2 aeration units, 2 secondary clarifiers, chlorine contact chambers.

SLUDGE TREATMENT None

DISPOSAL Hauled to Virginia Key Waste Water Treatment Plant

REMARKS

PREPARED BY:

Sheet ___of_____

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

PLANT Community Utilities

DATE ON		12/8	9 Dec 70	10 Dec 70	11 Dec 70	13 Dec 70	14 Dec 70 AVERAGE
TIME ON		14:30	0846	0824	0829	0930	~~1209~~
DATE OFF		9 Dec 70	10 Dec 70	11 Dec 70	~~13 Dec 70~~	14 Dec 70	~~15 Dec 70~~
TIME OFF		0846	0824	0829	~~0950~~	1202	~~1044~~
FLOW	START	837131/7.1	838504	840481	~~845935~~	845935	~~[illegible]~~
	END	838504	840481	842311		848296	
	TOTAL X100	1368	1977	1830		2361	
(Tri)	24 hr. Flow Rate	598,410	716,051	745,240			
INF.	TEMP. ON	25.0 °C	25.2 °C	25.3 °C		25.1 °C	25.6 °C
	PH · ON	7.0	—	9.8		10.2	9.7
EFFLUENT	TEMP · ON	24.75 °C	25.0 °C	25.1 °C	~~[illegible]~~	25.4 °C	25.5 °C
	PH · ON	7.1	—	6.4	~~[illegible]~~	10.1	9.8
	Cl. Residual	3 est.	2.5	2.0 est.		1.0	2.0
	CHLORINE·ON	—	—	—	—	—	—
	CHLORINE·OFF	—	—	—	—	—	—
	ON-OFF-lbs	—	—	—	—	—	—

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
12/8	Normal	recirculating pump being repaired		~~GAE~~
9 Dec 70	Clear w/white suds; some Nose+Eyes Burn at Manhole	Normal		GAE
10 Dec 70			OVER.	GAE
11 Dec 70	Normal	Normal	OVER	GAE
13 De 70	Normal	Normal	OK	—
14 Dec			~~Effluent~~ #222 empty Influent #386 empty	CHC over →
15 Dec			#2222 ERR. no sample [illegible]	[illegible]

* Tri - Get flow data from Office

Sheet ___ of _____

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

PLANT COMMUNITY UTILITIES

DATE ON		8 DEC 70	9 DEC 70	10 DEC 70	13 DEC 70	14 DEC 70	AVERAGE
TIME ON		1430	0846	0824	0950	1202	
DATE OFF		9 DEC 70	10 DEC 70	11 DEC 70	14 DEC 70	15 DEC 70	
TIME OFF		0846	0824	0829	1202	1044	
FLOW	START	837136	838504	840481	845935	848296	
	END	838504	840481	842311	848296	850295	
	TOTAL ×1000	1,368,000 419,000	1,977,000 515,000	1,830,000 563,000	2,361,000 405,000	1,999,000 416,000	
Est.	24 hr. Flow Rate	2,348,000	2,531,000	2,398,000	2,534,000	2,553,000	2471,000
INF.	TEMP. ON	25.0°C	25.2°C	25.3°C	25.1°C	25.6°C	25.2°C
	PH - ON	7.0	–	–	–	–	–
EFFLUENT	TEMP - ON	24.75°C	25.0°C	25.1°C	25.4°C	25.5°C	25.2°C
	PH - ON	7.1	–	6.4	–	–	–
	Cl. Residual	3 EST	2.5	2.0 ppm	1.0	2.0	2.1
	CHLORINE-ON						
	CHLORINE-OFF						
	ON-OFF-lbs						

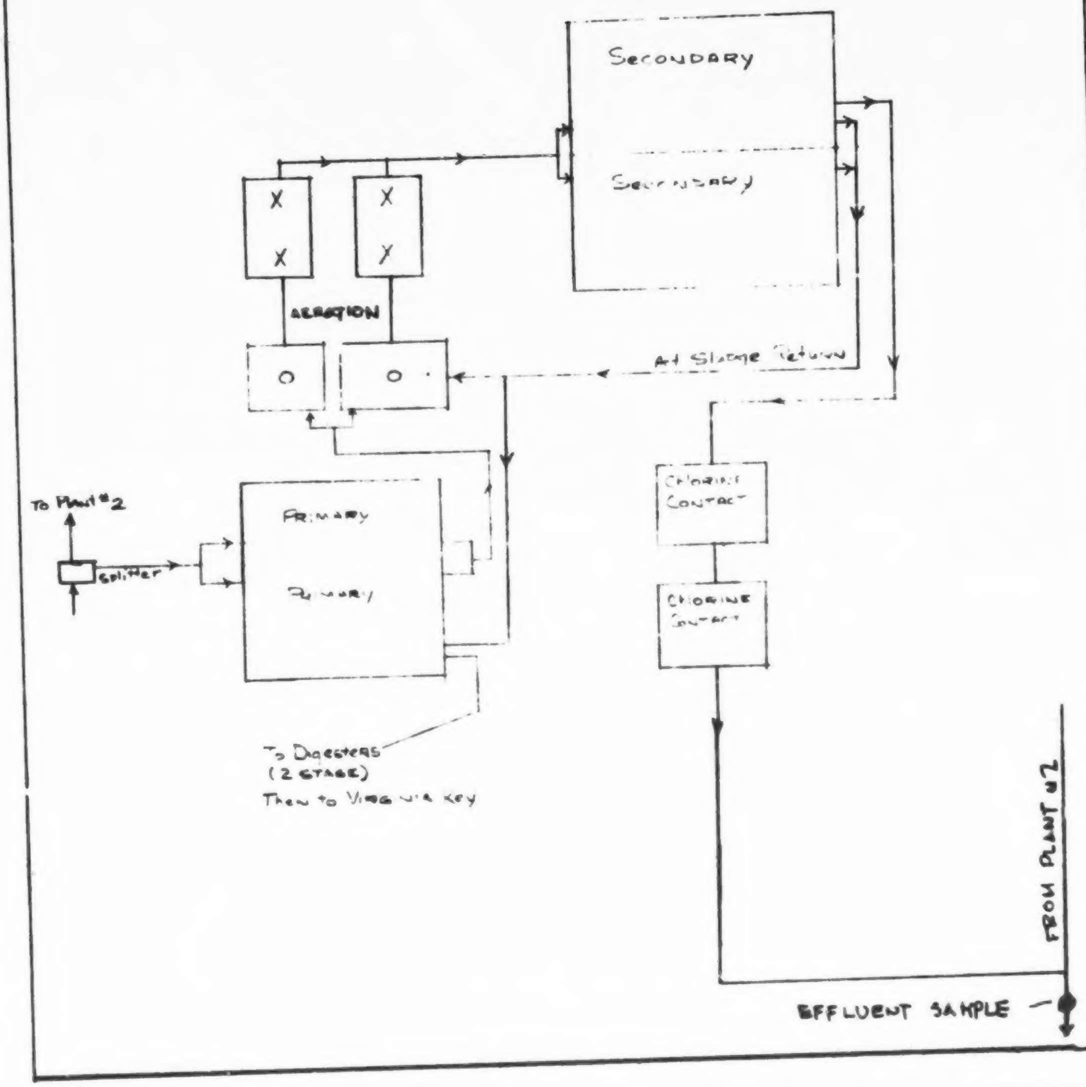
DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO SAMPLER OPERATION	SAMPLES COLLECTED BY

NEXT SHEET

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Community Utilities Plant # 1

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES

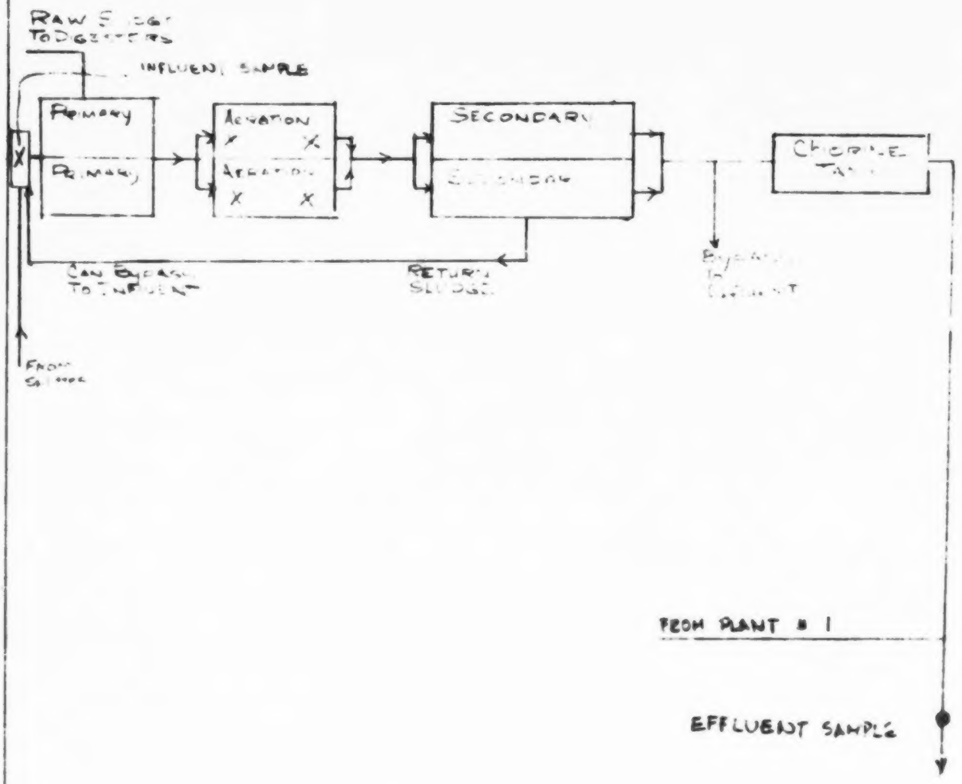


PREPARED BY:

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Community Utilities Plant #2

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY:

MR. OLINGER: Report on Waterborne Wastes of the Doral Country Club.

Introduction.

The plant is composed of two Dodge-White aeration units in parallel. Final effluent flows into a lake on country club property, through a series of canals and lakes, off the property and into the Dressels Dairy Canal. Primary contact was Mr. Tony Ruane, Chief, Engineering Section, Doral Country Club.

Summary and conclusions.

The average five-day biochemical oxygen demand in the influent of the Doral Country Club Wastewater Treatment Plant was 295 milligrams per liter and the average concentration in the effluent was 28.3 milligrams per liter. The average concentrations of total suspended solids in the influent and effluent were 218 and 53.6 milligrams per liter respectively. The median concentrations of total and fecal coliform were both 20 MPN per 100 ml, although high values of 1,700 MPN per 100 ml for total coliform and 170 MPN per 100 ml for fecal coliform did occur on December 8, 1970.

This plant did not meet the State of Florida performance criteria which requires 90 percent treatment. The average BOD_5 removal efficiency was 90.1 percent, although on December 8, 1970, 79.5 percent of the BOD_5 was removed. The average total suspended solids removal efficiency was extremely poor at 57.6 percent.

The following are recommended to improve the operation of this plant:

1. The installation of a flow measuring device.

2. Final clarifiers be evaluated to determine if operating procedure or the size of the clarifier or sludge return equipment are the cause of the low suspended solids removal efficiency.

3. The chlorine dosage be more carefully controlled to insure effective chlorination at all times.

4. The plant operators should proceed to obtain a Florida treatment plant operator's license.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from
Doral Country Club
N.W. 50th Street and 92nd Avenue
Miami, Dade County, Florida
January 12, 1971

INTRODUCTION

The Doral Country Club Waste Water Treatment Plant was surveyed during the period December 6 - 11, 1970. The plant is composed of two Dodge-White aeration units in parallel. Final effluent flows into a lake on the Club property, through a series of canals and lakes, off the property and into the Dressels Dairy Canal. Serco automatic samplers were utilized to collect five 24-hour composites of influent and effluent (after chlorination). Messrs. Terry Davis and George Egermier were the sample collectors. Primary contact was Mr. Tony Ruane, Chief, Engineering Section, Doral Country Club.

SUMMARY AND CONCLUSIONS

The average five-day biochemical oxygen demand (BOD_5) in the influent of the Doral Country Club Waste Water Treatment Plant was 295 mg/l and the average concentration in the effluent was 25.3 mg/l. The average concentrations of total suspended solids (TSS) in the influent and effluent were 218 and 53.6 mg/l respectively. The median concentrations of total and fecal coliform were both 20 MPN per 100 ml, although high values of 1700 MPN per 100 ml for total coliform and 170 MPN per 100 ml for fecal coliform did occur on December 6, 1970.

This plant did not meet the State of Florida ~~Dade County~~ performance criteria ~~for BOD_5 and TSS~~ which requires 90% treatment ~~an average removal~~ efficiency ~~of 90% with no values less than 85%~~. The average BOD_5 removal efficiency was 90.1%, although, on December 6, 1970, 79.5% of the BOD_5 was removed. The average TSS removal efficiency was extremely poor at 57.6%. The average removal efficiencies were calculated from the daily removal efficiencies.

The following are recommended to improve the operation of this plant:

1. The installation of a flow measuring device.
2. The final clarifiers be evaluated to determine if operating procedure or the size of the clarifier or sludge return equipment are the cause of the low suspended solids removal efficiency.
3. The chlorine dosage be more carefully controlled to insure effective chlorination at all times.
4. The plant operators should proceed to obtain a Florida treatment plant operator's license.

INVENTORY

The system consists of two Dodge-White aeration units, followed by a chlorine contact chamber. The Dodge-White system consists of aeration and reaeration zones, plus a final or secondary clarifier. The effluent from the two units is combined and flows through a chlorine contact chamber.

DISCUSSION OF RESULTS

The Doral Country Club Waste Water Treatment Plant does not have a flow meter. However, a flow meter located at the Club's water treatment plant was used to estimate flow through the waste water treatment plant during the study. All treated water, except make-up for the swimming pool, should be treated by the waste water facility. The daily quantity of make-up water used in the swimming pool is not known. The average flow measured at the water plant during the study was 0.215 MGD. On December 2[illegible], 1970 between 12:45 p.m. and 1:15 p.m., flow measured at the effluent weir of the chlorine contact chamber averaged 0.264 MGD. Therefore, it appears that almost all of the treated water is received by the waste water treatment plant. For this reason the daily flow at the water plant was used to estimate the waste loads being discharged by the waste treatment plant.

The average influent BOD_5 of this treatment plant was 295 mg/l and an average of 53 lbs. per day were discharged by the plant at an average concentration of 28.3 mg/l. The average BOD_5 removal efficiency was 90.1%. Removal efficiencies for total organic carbon (TOC) and chemical oxygen demand (COD) were considerably lower averaging 63.9% and 77.5% respectively.

Total suspended solids removal efficiencies averaged 57.6% during the study, and ranged from 6.7 to 9[illegible].2%, indicating a severe problem. However, 97.7% of the settleable solids were removed.

The effluent of this plant was not highly nitrified. Ten lbs. per day of organic nitrogen and nine lbs. per day of ammonia nitrogen were discharged, but only three lbs. per day of nitrite-nitrate nitrogen were discharged.

The effluent was generally effectively chlorinated with an average chlorine residual of 4.2 mg/l and median total and fecal coliform concentrations of 20 MPN/100 ml. Although, on December [illegible], 1970, the chlorine residual was zero and, as expected, high bacterial concentrations were observed.

The daily values for the parameters evaluated during this study are presented on the attached Field and Data Summary Sheets.

DISCUSSION OF OBSERVATIONS

The general appearance of the plant is fair. "Housekeeping" was fair and there were no mechanical problems during the survey period. Visual appearance of the effluent was poor, as there was visual evidence of suspended or settleable solids. Sampling personnel reported turbidity and a heavy floc flowing over the final weir on both December 7th and

December 8th. To remedy this, we recommend that the final clarifiers be evaluated to determine if operating procedure or the size of the clarifier or sludge return equipment is the cause of the low suspended solids removal efficiency. In addition, there is no means of measuring flow in the plant. We recommend installation of a flow measuring device.

The operators of this plant are not licensed. It is, therefore, recommended that the plant operators proceed to obtain a Florida treatment plant operator's license.

Doral Country Club should be commended for recycling both the effluent and sludge from this plant. The effluent flows into a lake on the Club property and water from this lake is used to irrigate the golf course. Dried sludge is used for fertilizer.

LAWRENCE W. OLINGER

ROBERT L. KING

Sheet ___ of ___

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

PLANT Doral STP

DATE OFF		12/2	12/8	12/9	12/10	12/11	AVERAGE
FLOW - MGD		0.215 *	0.239	0.204	0.408	0.010	0.215
5 DAY B O D mg/l	INFLUENT	311	261	313	302	281	295
	EFFLUENT	32	53.6	27.3	15.8	13	28.3
	IN - OUT		207.4	285.7	[illegible].2	268	☒
	% REMOVAL	[illegible]	79.5	91.3	94.8	95.4	[illegible]
	LOAD lbs/day	57	107	46	54	1	[illegible]
C O D mg/l	INFLUENT	731	786	787	772	806	776.4
	EFFLUENT	[illegible]	187	142	150	129	172
	IN - OUT		599	645	622	677	☒
	% REMOVAL	63.1	76.2	82.0	80.5	84	77.5
	LOAD lbs/day	[illegible]	372	241	510	11	[illegible]
T S S mg/l	INFLUENT	248	60	112	184	488	218
	EFFLUENT	100	56	59	44	9	53.6
	IN - OUT	148	4	53	140	479	☒
	% REMOVAL	59.7	6.7	47.3	76.1	98.2	57.6
	LOAD lbs/day	[illegible]	112	100	150	1	108
V S S mg/l	INFLUENT	32	24	64	12	480	122.4
	EFFLUENT	106	52	55	12	5	46
	IN - OUT	0	0	9	0	475	☒
	% REMOVAL	0	0	14.1	0	98.9	26.0
	LOAD - lbs/day	190	104	94	41	0	86
Settlable Solids ml/l	INFLUENT	18	10	8	14	12	12.4
	EFFLUENT	1	0.2	.1	.4	nil	.34
	IN - OUT	17	9.8	7.9	13.6	12	☒
	% REMOVAL	94.4	98	98.8	97.1	100	97.7
T O C mg/l	INFLUENT	158	130	130	[illegible]	182.5	155
	EFFLUENT	71	50	40.5	[illegible].5	70	56
	IN - OUT	87	80		126.5	112.5	☒
	% REMOVAL	55.1	61.5	68.8	72.3	61.6	63.9
	LOAD - lbs/day	127	100	69	165	6	93

INFLUENT BOD POPULATION EQUIVALENT = 3112

EFFLUENT BOD POPULATION EQUIVALENT = 312

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

* Average flow during study

From The Desk Of
Michael V. Polito

Sheet____ of ______

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT Doral S.T.P.

DATE OFF		12/7	12/8	12/9	12/10	12/11	AVERAGE or MEDIAN*
FLOW MGD		0.215‡	0.239	0.204	0.408	0.010	0.215
KTELDAHL NITROGEN as N	CONC. mg/l	12.9	11.2	11.8	9.2	8.7	10.0
	LOAD lbs/day	23	22	20	31	1	19
AMMONIA NITROGEN as N	CONC. mg/l	3.5	6.4	4.5	6.0	45	5.0
	LOAD lbs/day	6	13	8	20	0	9
ORGANIC NITROGEN as N	CONC. mg/l	9.4	4.8	7.3	3.2	4.2	5.8
	LOAD lbs/day	17	10	12	11	0	10
NO2 NO3 as N	CONC. mg/l	2.0	1.2	0.8	2.4	0.2	1.3
	LOAD lbs/day	4	2	1	8	0	3
TOTAL PHOSPHORUS AS P	CONC. mg/l	5.8	8.5	6.8	7.0	5.5	6.7
	LOAD lbs/day	10	17	12	24	0	13
CHLORIDE	CONC. mg/l	56	58	65	50	57	55
TOTAL COLIFORM	CONC. MPN/100ml	20	1700	<18	<18	230	20
Fecal COLIFORM	CONC. MPN/100ml	20	170	<18	<18	45	20

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

‡ Average flow during study period.

Sheet ___ of _____

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT -- GENERAL INFORMATION

DATE OF VISIT December 10, 1970
PLANT NAME: Doral Country Club
PLANT OWNER: Doral Country Club
ADDRESS N.W. 50th Street and 92nd Avenue, Miami, Florida
TELEPHONE
COLLECTION SYSTEM - TYPE: Separate
OWNER Same as above.
ADDRESS
TELEPHONE

DESIGN AVERAGE DESIGN FLOW 0.170 MGD YEAR COMPLETED 1965
STREAM FLOW cfs DURATION days FREQUENCY Yrs
CONSTRUCTION COST No data.
POPULATION SERVED Approximately 1000 guests, 500 employees, Clubhouse facilities, and dining room facilities.

OPERATION ANNUAL COST No data.
PERSONNEL Two operators.
LEVEL OF CERTIFICATION None
CONDITION OF EQUIPMENT Fair
OUTFALL TYPE Lake on Golf Course, then to Dressels Dairy Canal. SIZE LENGTH
DISCHARGED TO WATER COURSE MILEAGE
LATITUDE LONGITUDE
TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)

Splitter box to two identical units. Each unit consists of aeration zone (blower driven aeration), reaeration zone, then secondary clarifier. Effluent from each unit is then combined and flow is through a contact chamber to a lake on Club property.

SLUDGE TREATMENT An aerobic digester to sludge drying beds.

DISPOSAL Dried sludge is mixed with soil and used as fertilizer on the Golf Course grounds.

REMARKS

PREPARED BY:

Sheet ___of_____

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

PLANT Doral S.T.P.

center Plant

DATE ON		6 Dec 70	7 Dec 70	8 Dec 70	9 Dec 70	10 Dec 70	AVERAGE
TIME ON			1228	1125	1135	1245	
DATE OFF		7 Dec 70	1125	9 Dec 70	10 Dec 70	11 Dec 70	
TIME OFF		12-28	8 Dec 70	1135	1245	1219	
FLOW	START	-	66153100	66382500	66586200	67011000	
	END	66153100	66382500	66586200	67011000	67021500	
	TOTAL	-	224400	203,700	424,800	10500	
	24 hr. Flow Rate	-	239,400	203,700	407,800	10,500	215,400
INF.	TEMP. ~~ON~~ OFF	28.1°C	29.3°C	28.9°C	29.9°C	29.6°C	29.2
	PH - ~~ON~~ OFF	6.8	6.89	7.2	—	6.7 * 10.2	6.8
EFFLUENT	TEMP ~~ON~~ OFF	29.8°C	27.6°C	27.5°C	28.0°C	27.1°C	28.1
	PH - ~~OFF~~ OFF	6.7	6.8	6.9	-	6.7 * 10.2	6.8
	Cl. Residual	2.0	0/white	3.0 est.	8.0 EST	8.0 EST	4.2
	CHLORINE ON	-	-	-	-	-	
	CHLORINE OFF	-	-	-	-	-	
	ON-OFF-lbs	-	-	-	-	-	

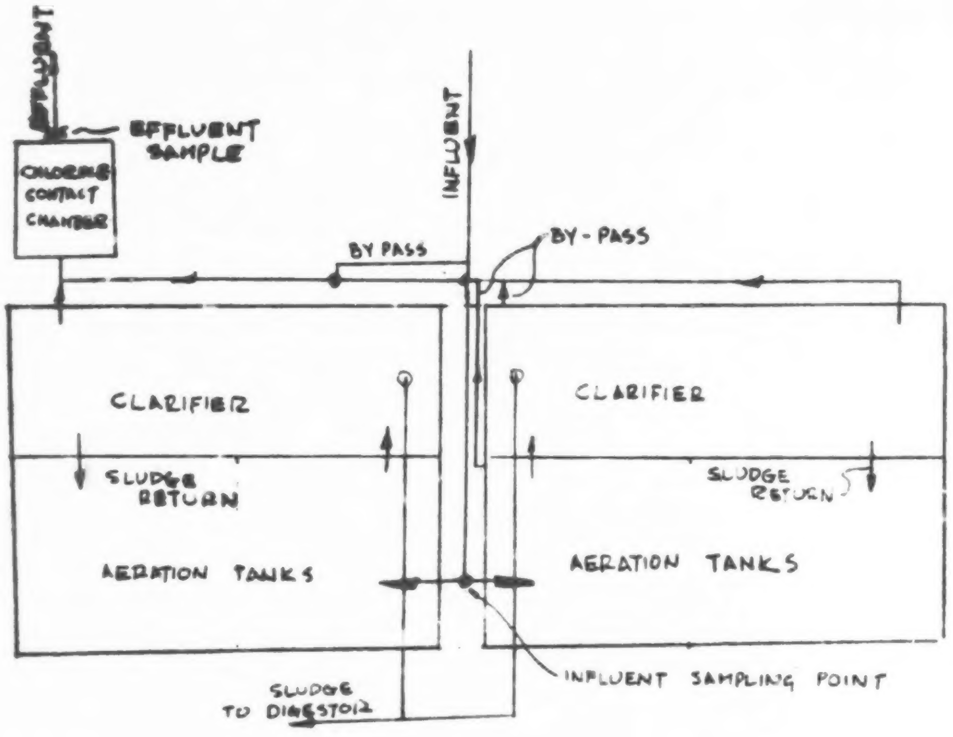
DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO SAMPLER OPERATION	SAMPLES COLLECTED BY
6 Dec		Strengeder around Plant		GAE
7 Dec 70	Heavy floc seen portion of time going thru final weir	Normal / Suds in AT.	over →	GAE
8 Dec 70	Brown Turbid with heavy floc. Suds in CL2 channel. One used sewage related article floating in CL2 channel	* over →	16 Inf Blank 24 Off Short 11 Eff Tripped	GAE also
9 Dec 70	Turbid	No Influent due to malfunctions check valve in lift station		GAE
10 Dec 70	Turbid	Suds in Aerator + CL2 contact channel + after final weir		GAE
11 Dec 70	Turbid	Suds in CL2 channel	OVER	GAE

* Ph METER — 6.84 buffer at 27.1°C reads 10.3 pH

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT DORAL COUNTRY CLUB

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY: L. OLINGER

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from the Atomic Sewerage Plant.

The Atomic Sewerage Plant was surveyed during the period December 14 to 18, 1970. The plant is an activated sludge system, designed to process septic tank wastes, with a three-cell (series) lagoon as a polishing pond system. The effluent flows to the F.E.C. Canal. Primary contact was Mr. Drew, the plant owner.

Summary and conclusions.

The average quantity of waste treated by the Atomic Sewerage Plant during the study was 25,000 gallons per day. The average influent and effluent five-day biochemical oxygen demand of the waste was greater than 1,126 and 106 milligrams per liter respectively. The average total suspended solids concentration in the influent was 1,348 milligrams per liter and the average in the effluent was 124 milligrams per liter. The effluent was effectively chlorinated, since the median total and fecal coliform concentrations were both less than 18 MPN per 100 ml and the average chlorine residual was greater than 10 milligrams per liter.

The proposed State of Florida performance criteria requires 90 percent treatment. The average BOD_5 removal efficiency for this plant was greater than 90 percent and the minimum removal efficiency was 84 percent. In addition, an average removal efficiency for total suspended solids of 89 percent was calculated with a minimum value of 84 percent.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from
Atomic Sewerage Plant
6900 N.W. 58th Street
Miami, Dade County, Florida
February 16, 1971

INTRODUCTION

The Atomic Sewerage Plant was surveyed during the period December 14 - 18, 1970. The plant is an activated sludge system, designed to process septic tank wastes, with a three-cell (series) lagoon as a polishing pond system. The effluent flows to the F.E.C. Canal. A Sirco electric sampler was utilized to collect four 24-hour composites of the influent. The effluent was sampled using a Serco automatic sampler at the chlorine contact chamber after the lagoons. Messrs. Terry Davis and George Egermier were the sample collectors. Primary contact was Mr. Drew, the plant owner.

SUMMARY AND CONCLUSIONS

The average quantity of waste treated by the Atomic Sewerage Plant during the study was 25,000 gallons per day. The average influent and effluent five-day biochemical oxygen demand (BOD_5) of the waste was >1126 and 106 mg/l respectively. The average total suspended solids (TSS) concentration in the influent was 134 mg/l and the average in the effluent was 124 mg/l. The effluent was effectively chlorinated, since the median total and fecal coliform concentrations were both <18 MPN per 100 ml, and the average chlorine residual was >10 mg/l.

The proposed State of Florida performance criteria requires 90% treatment. The average BOD_5 removal efficiency for this plant was >90% and the minimum removal efficiency was 84%. In addition, an average removal efficiency for TSS of 89% was calculated with a minimum value of 84%. The average values were calculated from the daily values.

INVENTORY

The plant has a design capacity of 72,000 gallons per day of influent at a strength of 70 ppm. Major components are as follows:

1. A surge tank with a capacity of 11,600 gallons. Septic tank wastes are off-loaded from tank trucks to this tank. Wastes are pumped from this tank for 30 minutes each hour to the primary clarifier.

2. A primary clarifier with capacity of 6,950 gallons, designed for approximately 90 minutes detention time.

3. An aeration tank with 9,600 cu. ft. capacity and a blower system capable of delivering 220 cu. ft. of air per minute.

4. A secondary clarifier identical to the primary clarifier.

5. A three-cell lagoon system operated in series, with total area of 28,000 square feet.

6. A chlorine contact chamber with 1,120 gallons capacity, designed for 15 minutes detention time.

7. An anerobic digester with sludge disposal in drying beds. This sludge is stored and used as potting material for flowers.

DISCUSSION OF RESULTS

The Atomic Sewerage Plant treated an average of 25,000 gallons of waste per day, which accounts for 35% of the design flow.

The influent and effluent BOD_5 at this plant averaged >1126 and 106 mg/l respectively. A BOD_5 load of 22 lbs. per day was discharged to the F.E.C. Canal. The average BOD_5 removal efficiency was >90% and the minimum efficiency was 84%. Chemical oxygen demand (COD) and total organic carbon (TOC) tests were also utilized to determine the pollutional strength of this waste. The average removal efficiencies of COD and TOC were 88.4 and 87.4% respectively.

The average influent and effluent TSS concentration during the study were 1348 and 124 mg/l respectively. An average removal efficiency of 89% with a minimum value of 84% was calculated. An average of 15 lbs. per day of volatile suspended solids and 12 lbs. per day of fixed suspended solids were discharged by this plant. An average settleable solids removal efficiency of 99.6% was observed during the study period.

The average concentrations of ammonia nitrogen and organic nitrogen in the waste were 8 and 11 mg/l respectively, and 2 lbs. per day of each of these parameters were discharged. Practically no nitrite-nitrate nitrogen was discharged and 2 lbs. per day of total phosphorus was discharged at a concentration of 7.5 mg/l.

The average chlorine residual in the effluent was >10 mg/l and the median total and fecal coliform concentrations in the effluent were both <18 MPN per 100 ml indicating chlorination of the effluent was effective.

Daily values of all parameters are presented in the attached Field and Data Summary Sheets.

DISCUSSION

In the evaluation of this plant, the unique character of the wastes must be considered. The laboratory data during this study indicates that the BOD_5 was in excess of 1,300 mg/l, on two days during the survey and past laboratory analyses indicated that BOD_5 concentrations were as high as 7,000 mg/l occurred. The influent is high in solids and highly odorous. Considering the nature of the wastes handled, the plant is maintained well and housekeeping is exceptional. The plant is located a sufficient distance from residences and other businesses, so that odor is probably not a problem.

LAWRENCE W. OLINGER

ROBERT L. KING

Sheet 1 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

DATE OF VISIT December 16, 1970
PLANT NAME: Atomic Sewerage Plant
PLANT OWNER: Atomic Sewerage Plant
ADDRESS 6900 N.W. 58th Street, Miami, Florida
TELEPHONE
COLLECTION SYSTEM – TYPE: Not applicable.
OWNER:
ADDRESS:
TELEPHONE

DESIGN | AVERAGE DESIGN FLOW: 0.072 MGD YEAR COMPLETED: 1956
STREAM FLOW cfs | DURATION days FREQUENCY Yrs
CONSTRUCTION COST No data.
POPULATION SERVED Not applicable.

OPERATION | ANNUAL COST No data.
PERSONNEL Supervisor and three laborers.
LEVEL OF CERTIFICATION None
CONDITION OF EQUIPMENT Fair
OUTFALL | TYPE SIZE LENGTH
DISCHARGED TO: [illegible] FEC. Canal WATER COURSE MILEAGE:
LATITUDE LONGITUDE
TREATMENT | (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)

Surge tank, primary clarifier, aeration unit, secondary clarifier, three-cell lagoon.

SLUDGE | TREATMENT Anaerobic digester.

DISPOSAL Recycled, then to sludge drying beds.

REMARKS

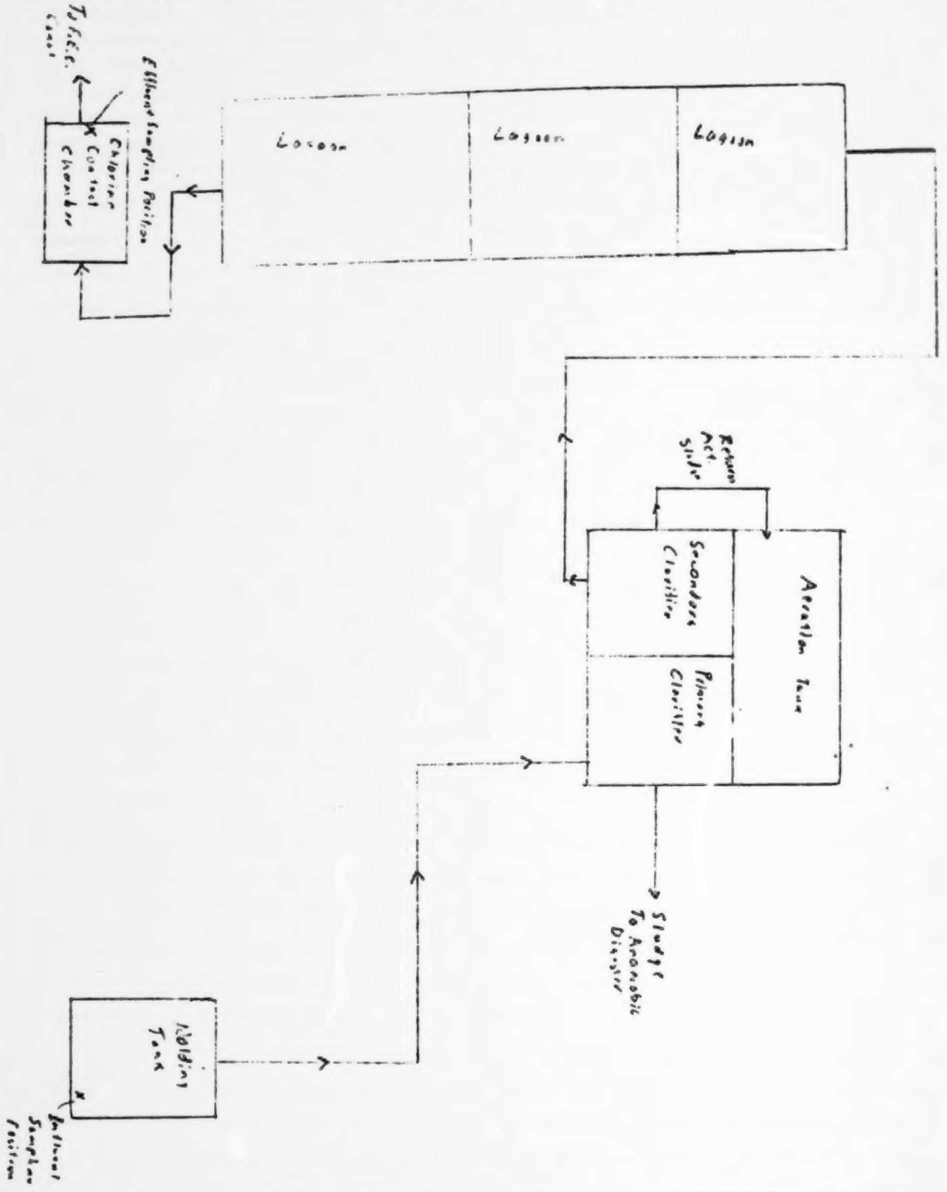
PREPARED BY: Robert L. King

2 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Atlantic Sewerage Plant

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY: Robert L. King

Sheet 3 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

PLANT ATomic sludge

DATE - OFF		12/15/70	12/16/70	12/17	12/18		AVERAGE
FLOW - MGD		0.027	0.024	0.026	0.024		0.025
5 DAY B O D mg/l	INFLUENT	>1322	690	>1312	1178		>1126
	EFFLUENT	70	108	124	12[illegible]		105.5
	IN - OUT						
	% REMOVAL	>94.7	84.4	>90.6	89.[illegible]		>89.9
	LOAD-lbs/day	16	22	27	24		22
C O D mg/l	INFLUENT	24,400	1,737	6,786	[illegible]		9179
	EFFLUENT	216	311	663	679		467.3
	IN - OUT						
	% REMOVAL	99.1	82.1	90.2	82.1		88.4
	LOAD -lbs/day	49	62	144	136		98
T S S mg/l	INFLUENT	1660	520	2070	1140		1348
	EFFLUENT	204	84	68	140		124.0
	IN - OUT						
	% REMOVAL	87.7	83.9	96.7	87.7		84.0
	LOAD- lbs/day	46	17	15	28		27
V S S mg/l	INFLUENT	1440	490	1990	1020		[illegible]
	EFFLUENT	66	56	52	116		72.5
	IN - OUT						
	% REMOVAL	95.4	88.6	97.4	88.6		[illegible]
	LOAD –lbs/day	15	11	12	23		15
Settlable Solids ml/l	INFLUENT	740	8	740	740		>32.0
	EFFLUENT	.1	.1	.1	0.0		.08
	IN - OUT						
	% REMOVAL	99.9	98.7	99.9	100		99.6
T O C mg/l	INFLUENT	1125	360	1350	1125		990.0
	EFFLUENT	63	90	112.5	130		98.9
	IN - OUT						
	% REMOVAL	94.4%	75.0	91.7	88.4		87.4
	LOAD - lbs/day	14	18	24	26		21

INFLUENT BOD POPULATION EQUIVALENT = >1326

EFFLUENT BOD POPULATION EQUIVALENT = 129

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

Released

From The Desk Of

Sheet 4 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT Atomic Sludge

DATE - OFF		12/15	12/16/70	12/17	12/18		AVERAGE or MEDIAN*
FLOW - MGD		0.027	0.024	0.026	0.024		0.024
KTELDAHL NITROGEN as N	CONC.-mg/l	12.9	21.8	19.9	21.3		19.0
	LOAD-lbs/day	3	4	4	4		4
AMMONIA NITROGEN as N	CONC.-mg/l	2.9	[illegible]	6.8	11.4		8.0
	LOAD-lbs/day	1	2	1	2		2
ORGANIC NITROGEN as N	CONC.-mg/l	10.0	10.9	13.1	9.9		11.0
	LOAD-lbs/day	2	2	3	2		2
NO_2 -NO_3 as N	CONC.-mg/l	0.3	0.3	0.3	0.4		.3
	LOAD-lbs/day	0	0	0	0		0
TOTAL PHOSPHORUS AS P	CONC.-mg/l	4.7	8.8	8.4	8.2		7.5
	LOAD-lbs/day	1	2	2	2		2
CHLORIDE	CONC.-mg/l	115	117	106	124		116
TOTAL COLIFORM	CONC.-MPN/100ml	<18	<18	–	<18		<18
Fecal COLIFORM	CONC.-MPN/100ml	<18	<13	–	<18		<18

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

Sheet 5 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

PLANT Atomic Sewage Co.

							AVERAGE
DATE ON		14 Dec 70	15 Dec 70	16 DEC 70	17 Dec 70		
TIME ON			1400 / 11:30	1200	1130		
DATE OFF		15 Dec 70	16 Dec 70	17 Dec	18 Dec		
TIME OFF		1400?/11:30	1200	11.30	0800		
FLOW	START		~~27,000~~				
	END	27,000	24,000				
	TOTAL	27,000	24,000	26,000	12,000		
	24 hr. Flow Rate	27,000	24,000	26,000	≈ 24,000		25,250
INF.	TEMP. ON	25.3°C	24.2°C	25.0	23.5	~~25.5~~	24.5
	PH - ON	9.9	7.2	7.5	6.6	~~7.5~~	7.8
EFFLUENT	TEMP - ON	24.0°C	23.0°C	24.5°C	21.0		23.1
	PH - ON	9.6	6.8	6.9	6.2		7.4
	Cl. Residual	>10.0/Red*	>10 20	>10	>10		>10
	CHLORINE-ON	–	–	–	–	–	
	CHLORINE-OFF	–	–	–	–	–	
	ON-OFF-lbs	–	–	–	–	–	

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
14 Dec 70			O.K.	GAE
15 Dec 70	Clear / suds	NORMAL	*16 Eff/DRY	
16 Dec 70	WHITE Cloudy	NORMAL	11+12 Eff Tripped 1000 Inf 9+15 clear 17+5 Dark 16-blank 16 Eff-blank	GAE
17 Dec	White cloudy	NORMAL		LAW
18 Dec	Normal	Normal	16+17 eff-blank	

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from Miami Lakes Utilities Wastewater Treatment Plant.

Introduction.

The plant is a combination of three package treatment units. The combined effluent is discharged to the 138th Street Canal. Principal contacts were Mr. George Hughes and Mr. Robert Gableman of Miami Lakes Utilities.

The average flow during this study was 0.73 million gallons per day, well under the design flow of 0.95 million gallons per day. The average five-day biochemical oxygen demand of the influent and effluent were 232.8 and 41.8 milligrams per liter respectively. The average total suspended solids concentrations were 171.6 milligrams per liter in the influent and 51.6 milligrams per liter in the effluent.

Although the average chlorine residual in the effluent was 4.6 milligrams per liter, effective disinfection of the effluent was not achieved. Median concentrations of 2,701,000 total coliform and 350,000 fecal coliform bacteria were detected in the final plant effluent. High chlorine demand wastes entering the plant from an industrial source consumed the chlorine and rendered it ineffective for bacterial disinfection.

The State of Florida performance criteria require average BOD_5 and total suspended solids removal efficiencies of 90 percent. These criteria were not met for either BOD_5, with an average removal of 79.8 percent, nor for total suspended solids, with an average removal of 70.9 percent. The extreme variation in removal efficiencies for both BOD_5 and total suspended solids would seem to indicate that the principal problem is plant operation.

The following recommendations are made to improve plant operation:

1. That the quality and quantity of industrial wastes flowing into the plant be determined and appropriate steps be taken to effectively deal with these wastes, either through pretreatment or provision of special treatment at the plant.

2. That operation be improved to effect complete disinfection of the effluent.

3. That operation be stabilized to accomplish maximum BOD_5 removal efficiencies.

4. That additional devices be provided or operation be modified to affect total suspended solids removal efficiencies.

MR. PATTON: Excuse me. Mr. Olinger, do you know if there was any pretreatment of the industrial wastes coming into the system?

MR. OLINGER: I am not sure. There are 24 industries going into the plant. I am not sure how many of them provide pretreatment at this time.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from
Miami Lakes Utilities Waste Water Treatment Plant

14045 N. W. 67th Avenue
Miami Lakes, Dade County, Florida
February 16, 1971

INTRODUCTION

The Miami Lakes Utilities plant was surveyed during the period December 13 - 18, 1970. The plant is a combination of three package treatment units. The combined effluent is discharged to the 138th Street Canal. A Serco automatic sampler was utilized to collect five 24-hour composites of the common effluent, after chlorination; while the Sirco electric automatic sampler was utilized to collect five 24-hour composites of the common influent at the final lift station. Daily grab samples of effluent were taken for chlorine residual, pH, and total and fecal coliform. Messrs. Terry Davis and George Egermier were sample collectors. Principal contacts were Messrs. George Hughes and Robert Gableman, of Miami Lakes Utilities.

SUMMARY AND CONCLUSIONS

The average flow during this study was 0.727 MGD, well under the design flow of 0.95 MGD. The average five-day biochemical oxygen demand (BOD_5) of the influent and effluent were 232.8 and 41.8 mg/l, respectively. The average total suspended solids (TSS) concentrations were 171.6 mg/l in the influent and 51.6 mg/l in the effluent.

Although the average chlorine residual in the effluent was 4.6 mg/l, effective disinfection of the effluent was not achieved. Median concentrations of 2,701,000 Total Coliform and 350,000 Fecal Coliform bacteria were detected in the final plant effluent. High chlorine demand wastes entering the plant from an industrial source, consumed the chlorine and rendered it ineffective for bacterial disinfection.

The Florida State Performance Criteria require average BOD_5 and TSS removal efficiencies of 90 percent. These criteria were not met for either BOD_5, with an average removal of 79.8 percent, nor for TSS, with an average removal of 70.9 percent. The extreme variation in removal efficiencies for both BOD_5 and TSS would seem to indicate that the principal problem is plant operation.

The following recommendations are made to improve plant operation:

1. That the quality and quantity of industrial wastes flowing into the plant be determined and appropriate steps taken to effectively deal with these wastes, either through pre-treatment or provision of special treatment at the plant.

2. That operation be improved to affect complete disinfection of the effluent.

3. That operation be stabilized to accomplish maximum BOD_5 removal efficiencies.

4. That additional devices be provided, or operation be modified, to affect greater TSS removal efficiencies.

INVENTORY

The three small package plants which make up the total system are similar in that they are activated sludge units with an inner circular compartment which functions as a secondary clarifier. They differ in capacity and operation. Specific details are as follows:

1. The Chicago process plant (capacity of 0.20 MGD). The outer annular compartmented ring consists of a contact stabilization zone (diffused air), chlorine contact chamber, and aerobic digestor.

2. The Walker plant (capacity of 0.250 MGD). The outer ring consists of a contact stabilization zone (diffused air), reaeration zone (diffused air), chlorine contact chamber, and aerobic digestor.

3. The Davco plant (capacity of 0.500 MGD). The outer ring consists of aeration and reaeration zones (diffused air), two-stage aerobic digestor zones, and chlorine contact chamber.

4. Sludge disposal from the plant is accomplished by hauling the liquid sludge to the Dade County Dump.

DISCUSSION OF RESULTS

The average combined flow through the three individual plants was 0.727 MGD during the survey, well below the average design flow of 0.950 MGD. The average BOD_5 of the influent and effluent were 232.8 and 41.8 mg/l, respectively. The average BOD_5 removal efficiency of this plant was 79.8 percent, varying from 71.4 percent to 90.3 percent, indicating erratic plant operation. An average of 253 lbs./day of BOD_5 was discharged to the 138th Street Canal. The average removal efficiencies of COD and TOC were 41.1 percent and 66.3 percent, respectively.

The influent and effluent total suspended solids concentrations averaged 171.6 and 51.6 mg/l, respectively, and the average removal efficiency was 70.9 percent, varying from 62.4 percent to 78.4 percent. This plant discharges 316 lbs./day of TSS. The average volatile suspended solids (VSS) and settleable solids (SS) removal efficiencies were 77.2 percent and 73.6 percent, respectively.

Nutrients discharged by this plant were principally in the form of ammonia nitrogen, 84 lbs./day, and total phosphorus, 80 lbs./day. Twenty-five lbs./day of organic nitrogen was discharged.

The average measured chlorine residual in the effluent of this plant was 4.6 mg/l. However, this is not representative of the normal chlorine residual during the survey, since the operator discovered that the chlorine residual was zero mg/l, immediately prior to arrival of the survey team and took temporary corrective action. Total coliform bacterial population reached over 16,000,000 MPN/100 ml on December 18th and fecal coliform bacteria were 1,700,000 MPN/100 ml on December 16th. Minimum total coliform population reported was 2,400 MPN/100 ml on December 15th.

The daily values for all parameters are presented in the attached Field and Data Summary sheets.

DISCUSSION OF OBSERVATIONS

The principal problem at this plant is the unknown quality and quantity of wastes being processed for the 24 industries located in the Miami Lakes Industrial Park. A listing of these industries is attached.

During the survey period, a problem arose which is apparently symptomatic of the general operational condition of this plant. On December 16, 1970, survey sampling personnel determined that the chlorine residual of the effluent was 0 ppm. The operator assumed that the chlorinator was not working and made an attempt to correct this situation, without success. He then began to allow a light flow of liquid chlorine in the manhole where effluent samples were being taken. After consultation with the utility company representatives the possibility of an industrial "slug", was suggested. Presuming this possibility, a sample of effluent from the Picker's X-Ray Solution Company, one of the industries served by the plant, was collected. The sample was taken to the Pollution Control Consultants, Inc., an independent testing laboratory, for a chlorine demand test. It is understood, unofficially, that the chlorine demand analyses indicated a value of approximately 250 ppm. Further questioning of the operator revealed that this was a recurring problem, and that the standard procedure was to simply attempt to add liquid chlorine to the manhole, a procedure which obviously did little to improve the disinfection efficiency of the plant.

At the time of the survey, operating personnel and management had little or no realization of the unique problems of processing industrial wastes. No effort has been made to assess either the quality or quantity of the wastes generated from each individual industry within the Miami Lakes Industrial Park. Charges for sewage were based upon the volume of water used, without regard for potential strength of wastes.

Since our survey, management has become aware of their problems with this plant and has hired a consulting firm to operate the plant. They have also contracted with a local laboratory to do a complete analysis of the quality and the quantity of wastes from each industry within the Park. It is recommened that a follow-up survey be conducted by local authorities to determine the effectiveness of these revised procedures.

ROBERT L. KING

Sheet 1 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

DATE OF VISIT December 17, 1970

PLANT NAME: Miami Lakes Utilities

PLANT OWNER: S[illegible]a Development Corporation

ADDRESS 14[illegible] N.W. 67th Ave., Miami Lakes, Florida 33014

TELEPHONE 82[illegible]30

COLLECTION SYSTEM – TY[illegible] Separate.

OWNER: same

ADDRESS:

TELEPHONE:

DESIGN AVERAGE DESIGN FLOW: 0.95 MGD YEAR COMPLETED:

STREAM FLOW cfs DURATION days FREQUENCY Yrs

CONSTRUCTION COST No data.

POPULATION SERVED 1327 plus 21 industries.

OPERATION ANNUAL COST No data.

PERSONNEL One at time of survey.

LEVEL OF CERTIFICATION None

CONDITION OF EQUIPMENT Fair

OUTFALL TYPE Above water level. SIZE LENGTH

DISCHARGED TO: 138th St. Canal. WATER COURSE MILEAGE:

LATITUDE LONGITUDE

TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)

Davco package plant (0.5 MGD), Walker package plant (0.25 MGD), Chicago package plant (0.2 MGD), common chlorinator.

SLUDGE TREATMENT Digesters in each package plant.

DISPOSAL To Dade County dump.

REMARKS

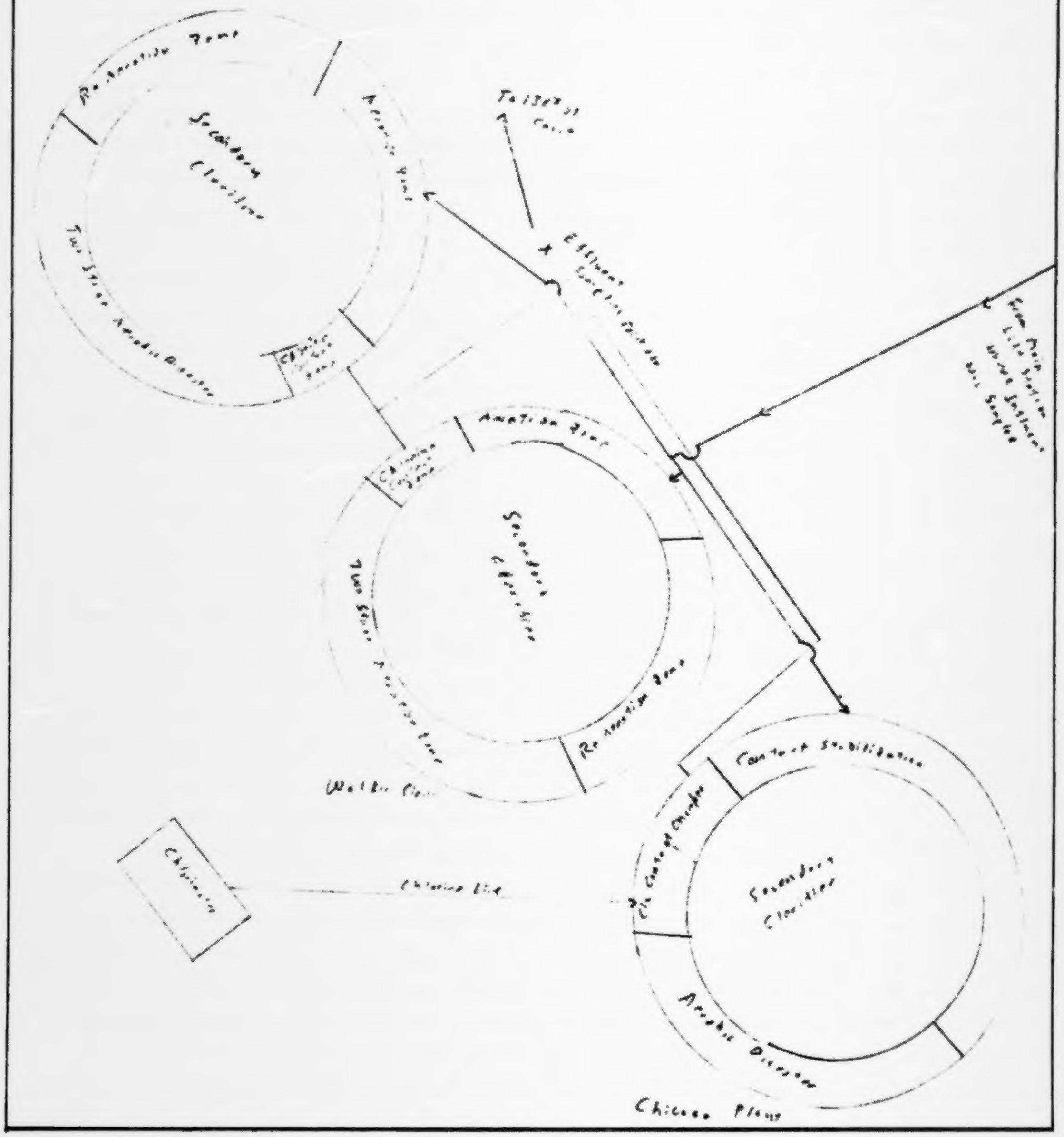
PREPARED BY: Robert L. King

2 of 2

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Miami Lakes Utilities

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY:

Sheet 3 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

PLANT Miami Lakes S.T.P.

DATE - OFF		12/14/70	12/15	12/16/70	12/17	12/18	AVERAGE
FLOW - MGD		0.760	0.733	0.702	0.697	0.741	0.727
5 DAY B O D mg/l	INFLUENT	390	232	161	217	164	232.8
	EFFLUENT	38	46	46	36	43	41.8
	IN OUT						
	% REMOVAL	90.2	80.2	71.4	83.4	73.8	79.8
	LOAD-lbs/day	241	281	269	209	266	253
C O D mg/l	INFLUENT	711	439	573	731	339	558.6
	EFFLUENT	448	180	607	487	220	388.4
	IN - OUT						
	% REMOVAL	37.0	59.0	N/A	33.4	35.1	41.1
	LOAD -lbs/day	2840	1100	3554	2831	1360	2337
T S S mg/l	INFLUENT	204	202	[illegible]	148	168	171.6
	EFFLUENT	74	76	34	32	42	51.6
	IN - OUT						
	% REMOVAL	63.7	62.4	75.0	78.4	75.0	70.9
	LOAD- lbs/day	469	465	199	186	260	316
V S S mg/l	INFLUENT	172	120	[illegible]	120	136	132.0
	EFFLUENT	18	44	30	20	32	29
	IN - OUT						
	% REMOVAL	89.5	63.3	73.2	83.3	76.5	77.2
	LOAD - lbs/day	114	269	176	116	198	175
Settlable Solids ml/l	INFLUENT	10	10	5	3	12	8.0
	EFFLUENT	0.0	2	.3	3	.7	1.2
	IN - OUT						
	% REMOVAL	100	80.0	94.0	0	94.2	73.6
T O C mg/l	INFLUENT	125	112.5	95.5	112.5	132.5	115.5
	EFFLUENT	35.5	37.5	165	46	42.5	65.3
	IN - OUT						
	% REMOVAL	71.6	66.7	N/A	59.1	67.9	66.3
	LOAD - lbs/day	225	229	966	267	263	390

INFLUENT BOD POPULATION EQUIVALENT = ________

EFFLUENT BOD POPULATION EQUIVALENT = ________

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

Released for

From The Desk Of
Michael V. P

Sheet 4 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT Miami Lakes STP

DATE - OFF		12/14	12/15	12/16/70	12/17	12/18	AVERAGE or MEDIAN*
FLOW - MGD		0.760	0.733	0.702	0.697	0.741	0.727
KTELDAHL NITROGEN as N	CONC.-mg/l	15.1	14.8	16.0	20.7	23.2	18.0
	LOAD-lbs/day	96	90	94	120	143	109
AMMONIA NITROGEN as N	CONC.-mg/l	11.7	11.4	12.0	17.0	17.4	13.9
	LOAD-lbs/day	74	70	70	99	108	84
ORGANIC NITROGEN as N	CONC.-mg/l	3.4	3.4	4.0	3.7	5.8	4.1
	LOAD-lbs/day	22	21	23	22	36	25
NO_2 -NO_3 as N	CONC.-mg/l	2.4	3.3	1.4	0.6	0.6	1.7
	LOAD-lbs/day	15	20	8	3	4	10
TOTAL PHOSPHORUS A S P	CONC.-mg/l	12.3	13.7	12.8	13.4	13.6	13.2
	LOAD-lbs/day	78	84	75	78	84	80
CHLORIDE	CONC.-mg/l	66	70	74	78	86	74.8
TOTAL COLIFORM	CONC.-MPN/100ml	3,300	2,400	5,400,000	~~>16,000,000~~	>16,000,000	2,701,650
Fecal COLIFORM	CONC.-MPN/100ml	<18	<18	1,700,000	~~700,000~~	700,000	350,009

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

Sheet 5 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

#8

PLANT Miami Lakes S.T.P.

							AVERAGE
DATE ON		13 Dec 70	14 Dec 70	15 Dec 70	16 Dec.	17 Dec.	☒
TIME ON		1019	1400	1334	1336	1418	☒
DATE OFF		14 Dec 70	15 Dec 70	16 Dec 70	17 Dec	18 Dec	☒
TIME OFF		1400	1334	1336	1418	10:36	☒
FLOW	START X00	48224550	48233323	48240530	48247550	48254727	☒
	END	48233323	48240530	48247550	48254727	48260996	☒
	TOTAL	8773	7807	7020	7177	6269	☒
	24 hr. Flow Rate	760150	732400	703010	647360	741,163	726,705
INF.	TEMP. ON	26.5°C	26.1°C	26.3°C	26.0°C	25.5	26.1
	PH - ON	9.5	9.3	7.7	7.3	7.5	8.3
EFFLUENT	TEMP - ON	26.3°C	26.1°C	26.4°C	26.5	25.5	26.2
	PH - ON	7.8	9.8	6.7	7.5	6.[illegible]	8.1
	Cl. Residual	3.0	2.0	0/white	10+	est 8	4.6
	CHLORINE-ON	-	440 #	401.0 #	346.5	562^{02}	439
	CHLORINE-OFF	440	401 #	346.5 #	260 #	504 #	392
	ON-OFF-lbs	-	45 #	54.5 #	86.5"	58	61

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
13 Dec 70	Suds	OK	—	—
14 Dec 70	Suds	OK	—	GAE
15 Dec 70	Suds	OK.	—	GAE
16 Dec 70	Suds	O.K.	—	GAE
17 Dec 70	Suds	1245 - Started dribbling Cl into manhole where samples located.	—	
18 Dec	Suds in eff	OK	—	

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from South Miami Heights Public Utilities Wastewater Treatment Plant.

The plant is an activated sludge system with final effluent flowing into a feeder canal to Black Creek. Primary contact was Gary Mishoe of the South Miami Heights Public Utilities Corporation.

Summary and conclusions.

The average influent five-day biochemical oxygen demand concentration was greater than 507 milligrams per liter and the average effluent concentration was 34.3 milligrams per liter. The average influent and effluent concentrations of total suspended solids were 958 and 83 milligrams per liter respectively. The median total coliform concentration for this plant was 410 MPN per 100 ml and the median fecal coliform concentration was 32 MPN per 100 ml. The average chlorine residual in the effluent was 1.1 milligrams per liter.

The proposed State of Florida performance criteria requires 90 percent treatment. The BOD_5 requirement was met with an average removal efficiency of 91.2 percent. The total suspended solids requirement was not met, since the average removal efficiency was 85.1 percent. However, a highly concentrated slug of waste received by the plant just prior to the study period appears to account for the poor solids removal. On the last three days of the study, when operation stabilized, the average total suspended solids removal efficiency for the period was 94.7 percent.

The following are recommended to improve plant operation:

1. A flow measuring device should be installed.

2. The outflow should be modified to eliminate the aesthetic problem of detergent foam in the feeder canal.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from
South Miami Heights Public Utilities Waste Water Treatment Plant

S.W. 117th Avenue and U.S. 1
Mailing Address P.O. Box 250
Perrine, Dade County, Florida
February 16, 1971

INTRODUCTION

The South Miami Heights Waste Water Treatment Plant was surveyed during the period January 3 - 8, 1971. The plant is an activated sludge system with final effluent flowing into a feeder canal to Black Creek. Serco automatic samplers were utilized to collect five 24-hour composites of influent and effluent before chlorination. Daily grab samples for pH, temperature, chlorine residual, and total and fecal coliform were also collected. Messrs. Terry Davis and Joe Hopson were sample collectors. Primary contact was Gary Mishoe of the South Miami Heights Public Utilities Corporation.

SUMMARY AND CONCLUSIONS

The average influent five-day biochemical oxygen demand (BOD_5) concentration was >507 mg/l and the average effluent concentration was 34.3 mg/l. The average influent and effluent concentrations of total suspended solids (TSS) were 95[illegible] and [illegible]3 mg/l respectively. The median total coliform concentration for this plant was 410 MPN per 100 ml and the median fecal coliform concentration was 32 MPN per 100 ml. The average chlorine residual concentration in the effluent was 1.1 mg/l.

The proposed State of Florida performance criteria requires 90% treatment. The BOD_5 requirement was met with an average removal efficiency of 91.2%. The TSS requirement was not met, since the average removal efficiency was 85.1%. However, a highly concentrated slug of waste received by the plant just prior to the study period appears to account for the poor solids removal. On the last three days of the study, when operation stabilized, the average TSS removal efficiency for the period was 94.7%. The average removal efficiencies and loads were calculated from the daily values.

The following are recommended to improve plant operation:

1. A flow measuring device should be installed.
2. The outfall should be modified to eliminate the aesthetic problem of detergent foam in the feeder canal.

INVENTORY

Major components are:

1. Comminutor.
2. Four primary clarifiers, with three presently in use.
3. Four aeration tanks.
4. Four secondary clarifiers.
5. Chlorine contact chambers.
6. Two-stage aerobic digestion.

DISCUSSION OF RESULTS

The actual flow measured at the South Miami Heights Waste Water Treatment Plant during the study was 1.089 MGD and the design flow is 1.75 MGD. There is no flow meter at this plant and flow was measured at the chlorine contact chamber effluent weir by a plant operator. During the study, flow was measured at two-hour intervals during the following periods: January 4, 1971, 1200 to 1900; January 5, 1971, 0800 to 1800; and January 6, 1971, 0800 to 1400.

The average influent and effluent BOD_5 concentrations during the study were >507 and 34.3 mg/l respectively. The average BOD_5 removal efficiency was 91.2%, and 306 lbs. per day were discharged. The plant was designed for an effluent loading of 200 ppm or 2,920 lbs. per day and is receiving a waste load of >4,600 lbs. per day or >507 mg/l. Even considering this, no deterioration in the performance of the plant with respect to BOD_5 removal has been observed. The chemical oxygen demand (COD) and total organic carbon (TOC) tests were also used to determine the efficiency of the plant. The average removal efficiencies for COD and TOC were 95.0 and 84.3% respectively.

The average influent and effluent TSS concentrations during the study were 958 and 83 mg/l respectively. The removal efficiencies were 58.4 and 83.0% on January 4, 1971 and January 5, 1971, respectively. However, they exceeded 90% for the next three days. The low removal efficiency during the initial part of the study was due to a slug of waste entering the plant on January 1, 1971. The average volatile suspended solids loading was 66[illegible] lbs. per day and that for fixed solids was 83 lbs. per day. The average settleable solids removal efficiency was 99.5%.

Most of the nitrogenous material discharged by this plant was in the form of ammonia nitrogen, with an average of 164 lbs. per day discharged at a concentration of 18 mg/l. The average loads of organic and nitrite-nitrate nitrogen discharged were 38 and 10 lbs. per day respectively. The plant also discharged 123 lbs. per day of total phosphorus at 13.6 mg/l.

The average chlorine residual concentration in the effluent was 1.1 mg/l during the study. Even though the waste appeared to be properly disinfected, relatively high concentrations of both total and fecal coliform were found. The maximum total coliform concentration was 1,400 MPN per 100 ml and the median was 410 MPN per 100 ml. The maximum and median fecal coliform concentrations were 220 and 32 MPN per 100 ml.

DISCUSSION

General appearance of the plant is good. "Housekeeping" and mechanical maintenance were good during the period. At present, a new aerobic digester is under construction. As an interim measure, sludge is being hauled to Virginia Key by spetic tank trucks. On or about January 1, 1971, a line clearing program was in progress and a blockage was discovered and corrected. This caused a shock loading on the plant. It was necessary

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to waste a great amount of sludge, causing some loss in biological activity, plus an apparent "carry-over" of suspended solids on January 4, 1971. Mr. Mishoe was quite free and open in discussing this problem, and accurately predicted the results that would be obtained from the laboratory analyses.

The operators of this plant are extremely competent. All of the present personnel have been employed at the plant for less than six months. Therefore, the plant is in a state of transition, but definite signs of progress can be observed in the plant since our first visit late November 1970. There is a complete laboratory on site, and the results of past analyses by this laboratory correlated quite closely with our analyses. This has not generally been true in other plants.

During the early part of the week, there was a problem of detergent foam in the feeder canal near the outfall. As the plant recovered normal operation, this situation decreased in severity. The outfall is not a submerged type, so that the free fall of the effluent increases the foam problem.

LAWRENCE W. OLINGER

ROBERT L. KING

Sheet 1 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

DATE OF VISIT January 7, 1971

PLANT NAME: South Miami Heights Public Utilities Corp.

PLANT OWNER: South Miami Heights Public Utilities Corp.

ADDRESS P.O. Box 250, Perrine, Florida

TELEPHONE

COLLECTION SYSTEM – TYPE: Separate

OWNER: Same

ADDRESS:

TELEPHONE

DESIGN | AVERAGE DESIGN FLOW: 1.75 MGD YEAR COMPLETED: 1957

STREAM FLOW cfs | DURATION days FREQUENCY Yrs

CONSTRUCTION COST No data.

POPULATION SERVED 12,824 plus shopping center, 3 schools, restaurant and lounge, swimming pool, two churches, and one service station.

OPERATION | ANNUAL COST No data.

PERSONNEL 3 operators, one laborer, one mechanic.

LEVEL OF CERTIFICATION "A" for one operator.

CONDITION OF EQUIPMENT Good and improving.

OUTFALL | TYPE Above water level. SIZE LENGTH

DISCHARGED TO: Feeder canal to Black Creek. WATER COURSE MILEAGE:

LATITUDE LONGITUDE

TREATMENT | (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)

Bar minutor, primary clarification, aeration units, secondary clarifiers, chlorine contact chamber.

SLUDGE | TREATMENT Presently hauling to Virginia Key, Two stage aerobic digester under consideration.

DISPOSAL Will be to sludge drying beds.

REMARKS

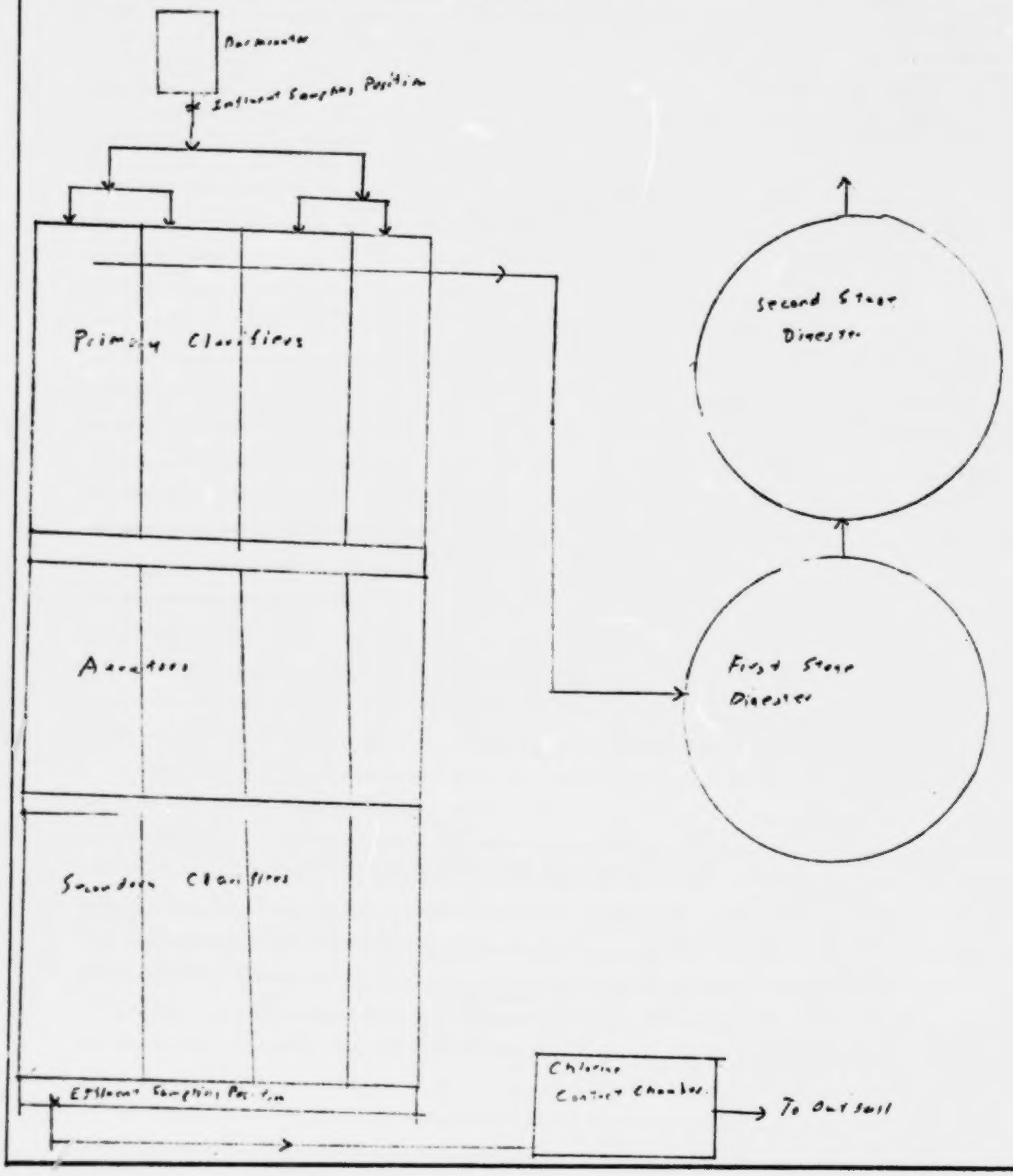
PREPARED BY: Robert L. King

2 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT: South Miami Heights Public Utilities

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY: B. King

Sheet 3 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

PLANT South Miami Heights

DATE - OFF		1-4-71	1-5-71	1-6-71	1-7-71	1-8-71	AVERAGE
FLOW - MGD		1.089*	1.310	0.787	1.170	1.089*	1.089
5 DAY BOD mg/l	INFLUENT	333	376	522	561	>745	>507
	EFFLUENT	47	42	47	23	12.5	34.3
	IN - OUT	286	334	475	538		
	% REMOVAL	85.9	88.8	91.0	95.9	>98.3	91.2
	LOAD-lbs/day	427	459	308	224	114	306
C O D mg/l	INFLUENT	2011	1506	1,694	2503	2541	2051
	EFFLUENT	97	114	116	85	61	94.6
	IN - OUT	1914	1392	1578	2418	2480	
	% REMOVAL	95.2	92.4	93.2	96.6	97.6	95.0
	LOAD -lbs/day	881	1245	761	829	554	854
T S S mg/l	INFLUENT	332	636	900	732	2192	958
	EFFLUENT	138	108	[illegible]	26	54	83
	IN - OUT	194	528	812	706	2138	
	% REMOVAL	58.4	83.0	90.2	96.4	97.5	85.1
	LOAD- lbs/day	1253	1180	578	254	490	751
V S S mg/l	INFLUENT	266	604	[illegible]	720	2176	923
	EFFLUENT	128	76	[illegible]	27	60	75
	IN - OUT	137	528	778	693	2116	
	% REMOVAL	50.0	87.4	90.5	96.3	97.2	84.3
	LOAD - lbs/day	1165	830	538	263	544	665
Settlable Solids ml/l	INFLUENT	8	12	19	15	36	19.0
	EFFLUENT	.1	.1	0.0	.1	0.0	0.1
	IN - OUT	7.9	11.9	19.	14.9	36.0	
	% REMOVAL	98.8	99.3	100	99.3	100	99.5
T O C mg/l	INFLUENT	103	180	260	340	415	264
	EFFLUENT	34	27	33	25	18	31
	IN - OUT	69	153	227.5	315	397	
	% REMOVAL	67.0	85	91.1	92.6	95.7	84.3
	LOAD - lbs/day	309	295	340	244	163	272

INFLUENT BOD POPULATION EQUIVALENT = ________

EFFLUENT BOD POPULATION EQUIVALENT = ________

93.7

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

* AVERAGE FLOW USED

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From The Desk Of

Sheet 4 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT South Miami Heights

DATE - OFF		1/4/71	1-5-71	1-6-71	1-7-71	1-8-71	AVERAGE or MEDIAN*
FLOW - MGD		1.089*	1.310	0.787	1.170	1.089*	1.089
KTELDAHL NITROGEN as N	CONC.-mg/l	25.9	25.4	23.9	20.7	15.1	22.2
	LOAD-lbs/day	235	278	157	202	137	202
AMMONIA NITROGEN as N	CONC.-mg/l	20.4	19.0	18.0	18.0	14.5	18.0
	LOAD-lbs/day	185	208	118	176	132	164
ORGANIC NITROGEN as N	CONC.-mg/l	5.5	6.4	5.9	2.7	0.6	4.2
	LOAD-lbs/day	50	70	39	26	5	38
NO_2 -NO_3 as N	CONC.-mg/l	0.2	0.1	0.07	0.4	4.5	1.1
	LOAD-lbs/day	2	1	0	4	41	10
TOTAL PHOSPHORUS AS P	CONC.-mg/l	15.0	13.0	13.0	11.9	15.0	13.6
	LOAD-lbs/day	136	142	85	116	136	123
CHLORIDE	CONC.-mg/l	41	41	42	41	39	41
TOTAL COLIFORM	CONC.-MPN/100ml	490	20	—	1400	330	410
Fecal COLIFORM	CONC.-MPN/100ml	45	<15	—	220	<18	32

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

Sheet 5 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

PLANT S. Miami Heights

							*AVERAGE
DATE ON		3 Jan, 71	4 Jan	5 JAN 71	6 Jan 71	7 Jan, 71	
TIME ON		0900	1100	1105	1055	1005	
DATE OFF		4 Jan, 71	5 JAN 71	6 Jan	7 Jan 71	8 Jan, 71	
TIME OFF		1100	1105	1055	1005	1010	
FLOW	START	over					
	END						
	TOTAL						
	24 hr. Flow Rate		1.31 ~~[illegible]~~ mgd	.707 mgd	1.17 mgd		1.08 mgd
INF.	TEMP. ON	26	26.5	25.5	[illegible] 27	26.5	26.3
	PH - ON	7.3	7	7.2	[illegible] 7.4	7.2	7.2
EFFLUENT	TEMP - ON	27	26.5	26	[illegible] 26	27	26.5
	PH - ON	7.1	7.2	6.9	[illegible] 7.0	6.7	7.0
	Cl. Residual	>1.0	>1.0		[illegible] 1.0	1.5	1.1
	CHLORINE-ON						
	CHLORINE-OFF						
	ON-OFF-lbs						

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
3 Jan, 71	detergent foam in eff	normal	–	
4 Jan, 71	light detergent foam in effluent	"	–	
5 JAN 71	det. foam in eff	Normal	INF - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18, 24 BLANK → over	
7 Jan 71	light floc K coming out of clarifiers	Normal	Eff - 11, 13, 14, 15, 16 blank - over	
8 Jan 71 ~~[illegible]~~	Same as above	"	Over	

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from Southern Estates Wastewater Treatment Plant.

The plant is basically a contact stabilization plant, with 30 percent of the flow through a trickling filter after contact stabilization. Final effluent flows into a feeder canal to Snapper Creek. Primary contact was Mr. Porter Howard of Southland Utilities Corporation.

Summary and conclusions.

An average flow through the Southern Estates Wastewater Treatment Plant of 1.43 MGD was measured during the study. The average five-day biochemical oxygen demand of the influent and effluent were 134 and 31 milligrams per liter respectively. An average BOD_5 of 373 pounds per day was discharged into a feeder canal which flows into Snapper Creek. The average influent total suspended solids concentration was 166 milligrams per liter and an average loading of 588 pounds per day was discharged at an average concentration of 50 milligrams per liter. The median concentration of total coliform was 615 MPN per 100 ml, while the median fecal coliform concentration was 560 MPN per 100 ml, an indication of inadequate disinfection.

This plant does not meet the proposed State of Florida performance criteria, which requires 90 percent treatment. The average BOD_5 removal efficiency was 76.1 percent during this study and that for total suspended solids was 70 percent.

The following are recommended to improve plant operation.

1. The expeditious elimination of the infiltration problem in the collection system.

2. The reevaluation of chlorination procedures to insure effective disinfection.

3. Modification of operation or installation of additional devices to increase BOD_5 and total suspended solids removal efficiency.

(Which said report in its entiretly is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from
Southern Estates Waste Water Treatment Plant
11955 S.W. 34th Street
Owned by Southland Utilities Corporation
15450 N.W. 27th Avenue
Opa Locka, Dade County, Florida
February 16, 1971

INTRODUCTION

The Southern Estates Waste Water Treatment Plant was surveyed during the period December 13 - 18, 1970. The plant is basically a contact stabilization plant, with 30% of the flow through a trickling filter after contact stabilization. Final effluent flows into a feeder canal to Snapper Creek. The Serco automatic samplers were utilized to collect five 24-hour composites of influent and effluent, after chlorination. Daily grab samples were taken after chlorination, for chlorine residual, pH, and total and fecal coliform. Messrs. Terry Davis and George Egermier were sample collectors. Primary contact was Mr. Porter Howard of Southland Utilities Corporation.

SUMMARY AND CONCLUSIONS

An average flow through the Southern Estates Waste Water Treatment Plant of 1.43 MGD was measured during the study period. The average five-day biochemical oxygen demand (BOD_5) of the influent and effluent were 134 and 31 mg/l respectively. An average BOD_5 of 373 lbs. per day was discharged to a feeder canal which flows into Snapper Creek. The average influent total suspended solids concentration was 166 mg/1, and an average loading of 5[illegible] lbs. per day was discharged at an average concentration of 50 mg/1. The median concentration of total coliform was 615 MPN/100 ml, while the median fecal coliform concentration was 560 MPN/100 ml, an indication of inadequate disinfection.

This plant does not meet the proposed State of Florida performance criteria, which requires 90% treatment. The average BOD_5 removal efficiency was 76.1% during the study and that for total suspended solids was [illegible]0%. The average removal efficiencies and loads were calculated from their respective daily values.

The following are recommended to improve plant operation:

1. The expeditious elimination of the infiltration problem in the collection system.

2. The reevaluation of chlorination procedures to ensure effective disinfection.

3. Modification of operation or installation of additional devices to increase BOD_5 and total suspended solids removal efficiency.

INVENTORY

Specific design criteria were not available for this plant.

Major components are:

1. Comminutor.
2. Contact stabilization tank, with mechanical aeration.

3. Circular clarifier, which receives 70% of the flow from the contact chamber. Effluent from this clarifier flows directly to the chlorine contact chamber.

4. Rectangular clarifier, which receives 30% of the flow from the contact stabilization tank. Flow from this clarifier is to a high rate trickling filter, then to a rectangular clarifier, and then to the chlorine contact chamber.

5. Aerobic digester, which periodically receives sludge from the circular secondary clarifier.

DISCUSSION OF RESULTS

The average flow during the study period was 1.43 MGD, which is considerably greater than the design flow of 1.05 MGD. The average total chlorine residual was 2.[illegible] mg/l, but disinfection of the influent was not effective. The median concentration of total coliform was 615 MPN/100 ml, and the median concentration of fecal coliform was 560 MPN/100 ml. The pollutional strength of the discharge and efficiency of the plant were determined by the five-day biochemical oxygen demand (BOD_5), chemical oxygen demand (COD) and the total organic carbon (TOC) tests. The average BOD_5 of the effluent was 31 mg/l and an average of 373 lbs. per day were discharged to the feeder canal which flows into Snapper Creek. The removal efficiencies of BOD_5 varied from 61.5 to 85% for an average of 76.1%. The influent BOD_5 varied from 120 to 167 mg/l and averaged 134 mg/l. This was a low value for influent BOD_5 concentration relative to other values measured during the Dade County survey. This low concentration substantiates the belief that there is a high rate of infiltration in the collection system, although the average chloride concentration of 45 mg/l does not indicate brackish water infiltration. The average removals of COD and TOC were 7[illegible].0 and 67.6% respectively.

The average removal of total suspended solids (TSS) was 70%, and daily values ranged from 47.6% to 85.3%. The average quantity of TSS in the effluent was 50 mg/l or 588 lbs. per day. This low removal efficiency of TSS was substantiated by the visual appearance of the effluent during the survey. The plant efficiently removed settleable solids since the average removal was 9[illegible].0%.

During the survey the plant discharged an average of 104 lbs. total phosphorus per day and 135 lbs. of ammonia nitrogen per day.

Daily values of the data collected during the study are presented in the attached Field and Data Summary Sheets.

DISCUSSION OF OBSERVATIONS

General appearance of the plant is good, with "housekeeping" and mechanical maintenance adequate. Visual appearance of the effluent was poor, as is reflected in the low suspended solids removal efficiency. The outstanding problem in plant operation is that of hydraulic overloading, caused by infiltration in the collection system. During the three days of the survey when the flow meter was in operation, the average flow was 1.43 MGD, which is 136% of the design flow of 1.05 MGD. Flow records for the period December 15, 1970 to January 7, 1971, indicate an average flow of 1.390 MGD, with a range of 1.230 to 1.650 MGD. The low BOD_5 value for the influent reflects the fact that most of the overload is infiltration. Plant management is aware of this and is making some effort to solve the problem. I recommend that this effort be accelerated. Local pollution control authorities should resurvey plant operation after the infiltration problem is solved.

ROBERT L. KING

Sheet 1 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

DATE OF VISIT January 7, 1971
PLANT NAME: Southern Estates
PLANT OWNER: Southland Utilities Corporation
ADDRESS 15450 N.W. 27th Ave., Opa Locka, Florida
TELEPHONE
COLLECTION SYSTEM – TYPE: Separate.
OWNER: Same as above.
ADDRESS:
TELEPHONE

DESIGN | AVERAGE DESIGN FLOW: 1.05 MGD YEAR COMPLETED: 1967
STREAM FLOW cfs | DURATION days FREQUENCY Yrs
CONSTRUCTION COST No data.
POPULATION SERVED 2,500

OPERATION | ANNUAL COST
PERSONNEL Superintendent, operator-lab technician, 2 operators, lift station-mechanic, 2 laborers.
LEVEL OF CERTIFICATION Superintendent has "A".
CONDITION OF EQUIPMENT Fair
OUTFALL | TYPE Submerged SIZE LENGTH
DISCHARGED TO: Feeder canal to Snapper Creek WATER COURSE MILEAGE:
LATITUDE LONGITUDE
TREATMENT | (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)

Comminutor, contact aeration tank. 70% of flow to secondary clarifier, then to chlorine contact chamber. 30% to clarifier, trickling filter, then to secondary clarifier and to chlorine contact chamber.

SLUDGE | TREATMENT Aerobic digester, then to sludge bed.

DISPOSAL To land fill.

REMARKS | 40% hydraulic overloaded.

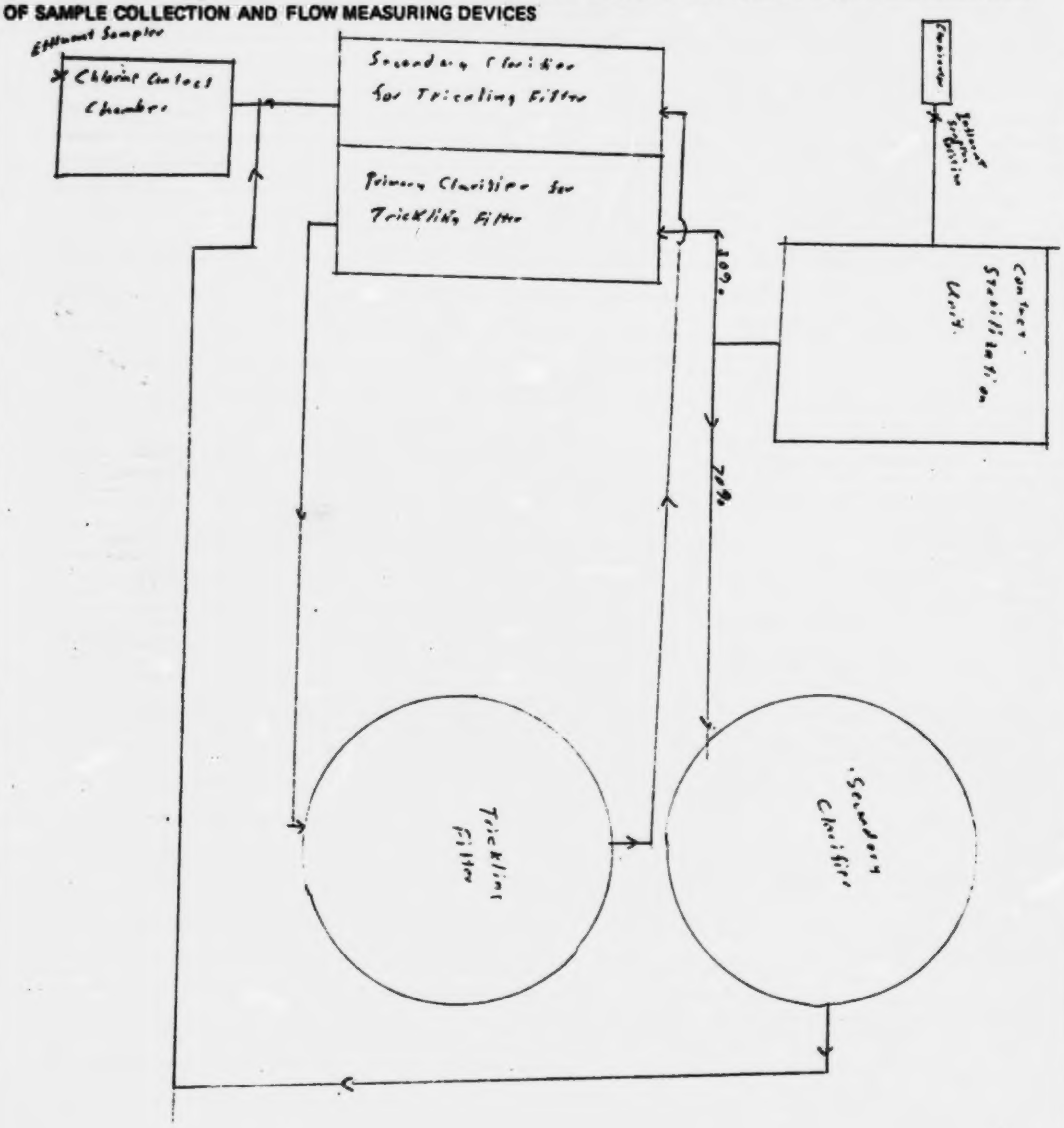
[illegible]

2 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Southern Estates S.T.P

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES


Effluent Sampler
* Chlorine Contact Chamber
Secondary Clarifier for Trickling Filter
Primary Clarifier for Trickling Filter
Comminutor
* Influent Sampling Station
Contact Stabilization Unit
30%
70%
Trickling Filter
Secondary Clarifier

PREPARED BY:

Sheet 3 of 3

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT - DATA SUMMARY

PLANT Southern Estates S.T.P.

DATE - OFF		12/14/70	12/15	12/16	12/17	12/18	AVERAGE
FLOW - MGD		1.428 *	1.428 *	1.438	1.277	1.569	1.428
5 DAY B O D mg/l	INFLUENT	120	130	130	167	124	134
	EFFLUENT	33	50	23.7	25	25	31.
	IN - OUT						☒
	% REMOVAL	72.5	61.5	81.8	85.0	79.8	76.1
	LOAD-lbs/day	393	595	284	266	327	373
C O D mg/l	INFLUENT	566	592	263	591	495	501.
	EFFLUENT	89	184	84	100	72	106
	IN - OUT						☒
	% REMOVAL	84.3	68.9	68.0	83.1	85.5	78.0
	LOAD -lbs/day	1060	2191	1007	1065	942	1253
T S S mg/l	INFLUENT	140	168	164	176	184	166.
	EFFLUENT	44	88	42	48	27	50
	IN - OUT						☒
	% REMOVAL	68.6	47.6	74.4	72.7	85.3	70
	LOAD- lbs/day	524	1048	504	511	353	588
V S S mg/l	INFLUENT	120	140	132	160	136	138
	EFFLUENT	40	48	39	45	28	40
	IN - OUT						☒
	% REMOVAL	66.7	65.7	70.5	71.9	79.4	71
	LOAD –lbs/day	476	572	468	479	366	472
Settleable Solids ml/l	INFLUENT	8	4	5	2	4	5
	EFFLUENT	0.0	.4	0.0	0.0	0.0	<.1
	IN - OUT						☒
	% REMOVAL	100	90.0	100	100	100	98.0
T O C mg/l	INFLUENT	105	87.5	95	100	90	96
	EFFLUENT	27	47.5	34	26	18	30
	IN - OUT						☒
	% REMOVAL	74.3	45.7	64.2	74.0	80.0	67.6
	LOAD - lbs/day	321	566	408	277	236	362

INFLUENT BOD POPULATION EQUIVALENT = ________

EFFLUENT BOD POPULATION EQUIVALENT = ________

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

* Average flow during the study period.

Released

From The Desk

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

Sheet 4 of 5

PLANT Southern Estates S.T.P.

DATE - OFF		12/14	12/15	12/16	12/17	12/18	AVERAGE or MEDIAN*
FLOW - MGD		1.428*	1.429*	1.438	1.277	1.569	1.429
KTELDAHL NITROGEN as N	CONC.-mg/l	13.4	19.0	12.6	11.2	11.5	13.5
	LOAD-lbs/day	160	226	151	119	150	161
AMMONIA NITROGEN as N	CONC.-mg/l	11.7	12.0	12.2	10.6	10.4	11.4
	LOAD-lbs/day	139	145	146	113	136	135
ORGANIC NITROGEN as N	CONC.-mg/l	1.7	7.0	0.4	0.6	1.1	2.2
	LOAD-lbs/day	20	83	5	6	14	26
NO_2 -NO_3 as N	CONC.-mg/l	0.6	1.1	0.6	0.8	1.2	0.9
	LOAD-lbs/day	7	13	7	9	16	10
TOTAL PHOSPHORUS AS P	CONC.-mg/l	6.7	14.2	7.2	7.3	8.0	8.7
	LOAD-lbs/day	80	169	86	78	105	104
CHLORIDE	CONC.-mg/l	47	47	46	39	45	45
TOTAL COLIFORM	CONC. - MPN/100ml	1100	<18 -	24,000	—	130	615
		1400		~~2400~~			
Fecal COLIFORM	CONC. - MPN/100ml	1100	<18 -	2400	—	<18 -	560

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

* Average flow during the [illegible] period.

Sheet 5 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

PLANT Southern Estates S.T.P.

							AVERAGE	
DATE ON		13 Dec 70	14 Dec 70	15 Dec 70	16 Dec 70	17 Dec		
TIME ON		0500	0530	0520	0946	1143		
DATE OFF		14 Dec 70	15 Dec 70	16 Dec 70	17 Dec 70	18 Dec 70		
TIME OFF		0930	0520	0946	1143	0955		
FLOW	START X 100	-	-	13800070	13814687.	13828520		
	END	-	13800070	13814687	13828520	13843037		
	TOTAL	-	-	14,61,700	1,383,300	1,451,700		
	24 hr. Flow Rate	-	-	1,437,738	1,276,882	1,569,405	1,428,012	Avg
INF.	TEMP. ON	25.4°C	25.1°C	25.4°C	25.0°C	[illegible]	25.3°C	25.2
	PH - ON	10.3	9.7	7.4	7.3	[illegible]	7.3	8.4
EFFLUENT	TEMP - ON	23.1°C	22.8°C	24.5°C	24.5	~~26~~.5°C	22.2°C	23.5
	PH - ON	9.9	9.4	7.4	7.3	[illegible]	6.7	8.1
	Cl. Residual	2.0 est	5.0	2.5	2.5	[illegible]	2.0 est	2.8
	CHLORINE-ON	Locked	No Key	-	230 #			
	CHLORINE-OFF	-	-	230 #.		430 #		
	ON-OFF-lbs	-	-	-				

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
13Dec70	Clear with small to medium size chunks of solids	Normal	O.K.	-
14Dec70	Normal	(Normal)? Reported to By-pass part of plant to post Cl_2 channel	8 eff. empty	GAE
15Dec70	Normal small suspended solids white (grease) specks	Normal	O.K	GAE.
16Dec70	Turbid, small & large solids in eff.	Flow meter at 2.0 Hockey Puck at 10.5" Normal	Inf 3,4,5 blank & low flow	GAE
17Dec70	Normal	Normal	Inf - 2?,1,2,3,4, ~~eff~~ - low	LAW
18Dec70	Solids, Brown	Normal	O.K.	GAE

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from Little Abner's Trailer Park Wastewater Treatment Plant.

Introduction.

The Little Abner's Trailer Park Wastewater Treatment Plant was surveyed during the period December 6 to 11, 1970. This plant is a Davco contact stabilization unit, with a polishing pond. Final effluent flows into Snapper Creek. Primary contacts were Mr. Russell Kuntzman, Maintenance Supervisor, and Mr. B. A. McAdams, Consulting Engineer.

Summary and conclusions.

The average flow through the Little Abner's Trailer Park Waste Treatment Plant was 0.072 million gallons per day.The design flow is 0.150 million gallons per day.

The influent five-day biochemical oxygen demand averaged greater than 402 milligrams per liter and an average of 32 pounds per day of BOD_5 were discharged to Snapper Creek at an average concentration of 52 milligrams per liter. The average total suspended solids concentration in the influent was 350 milligrams per liter and that in the effluent was 80 milligrams per liter.

The total and fecal coliform concentrations observed in the plant effluent line were 130 and less than 18 milligrams per liter respectively.

This plant does not meet the proposed State of Florida performance criteria of 90 percent treatment. The average removal efficiencies were greater than 84 percent for BOD_5 and 79.1 percent for total suspended solids.

The following are recommended to improve the operation of this plant:

1. The operating procedure should be modified to consider the higher than anticipated BOD_5 and total suspended solids concentrations in the influent.

2. The foam problem in the plant should be reduced by water spray and the practice of preventing foam by maintaining a lower than normal mixed liquor suspended solids ratio in the aeration tank should be terminated.

3. The plant operators should apply for certification.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Water Borne Wastes from
Little Abner's Trailer Park Waste Water Treatment Plant
11185 West Flagler Street
Miami, Dade County, Florida
February 12, 1971

INTRODUCTION

The Little Abner's Trailer Park Waste Water Treatment Plant was surveyed during the period December 6 - 11, 1970. The plant is a Davco contact stabilization unit, with a polishing pond. Final effluent flows into Snapper Creek. Serco automatic samplers were utilized to collect five 24-hour composites of influent and effluent. Daily grab samples for chlorine residual, total and fecal coliform, temperature and pH were also collected. The effluent was sampled from a wet well after the polishing pond. Messrs. Terry Davis and George Egermier were sample collectors. Primary contacts were Mr. Russell Kuntzman, Maintenance Supervisor, and Mr. B. A. McAdams, Consulting Engineer.

SUMMARY AND CONCLUSIONS

The average flow through the Little Abner's Trailer Park Waste Water Treatment Plant was 0.072 MGD and the design flow is 0.150 MGD.

The influent five-day biochemical oxygen demand (BOD_5) averaged $>$402 mg/l, and an average of 32 lbs. per day of BOD_5 were discharged to

Snapper Creek at an average concentration of 52 mg/l. The average total suspended solids concentration in the influent was 350 mg/l and that in the effluent was 60 mg/l.

The total and fecal coliform concentrations observed in the plant effluent line were 130 and <18 mg/l respectively.

This plant does not meet the proposed State of Florida performance criteria of 90% treatment. The average removal efficiencies were >84.1% for BOD_5 and 79.1% for total suspended solids.

The following are recommended to improve the operation of this plant:

1. The operating procedure should be modified to consider the higher than anticipated BOD_5 and total suspended solids concentrations in the influent.

2. The foam problem in the plant should be reduced by water spray and the practice of preventing foaming by maintaining a lower than normal mixed liquor suspended solids ratio in the aeration tank should be terminated.

3. The plant operators should apply for certification.

INVENTORY

In the present operating configuration the two major components are:

1. The Davco unit, which is a circular tank. The inner compartment functions as a secondary clarifier. The outer annular compartmented

ring consists of the contact zone, the reaeration zone, the aerobic digester, and the chlorine contact chamber. The plant is designed for a flow of 150,000 gallons per day with 90% removal of BOD and suspended solids at an influent concentration of 200 ppm each.

2. A small polishing pond.
3. An outfall to Snapper Creek in which chlorination occurs.

DISCUSSION OF RESULTS

Flow during the study period ranged from 0.01 MGD to 0.104 MGD and averaged 0.072 MGD. Plant records for August through November 1970 indicate that the flow variation encountered during the study is not uncommon.

The average BOD_5 concentration in the influent was >402 mg/l and that in the effluent was 52 mg/l. The average BOD_5 removal efficiency for this plant was >84.1%, but could not have exceeded an average of 85%, and 32 lbs. per day were discharged to Snapper Creek. Extremely low removals of chemical oxygen demand (COD), 49.1%, and total organic carbon (TOC), 57.2%, were observed at this plant during the study.

The average influent and effluent total suspended solids concentrations were 350 and 80 mg/l respectively, and the removal efficiency was 79.1%. The settleable solids removal efficiency was 92.2%.

Based on the design data this plant should remove 90% of BOD_5 and suspended solids based on influent concentrations of 200 mg/l for each parameter. Influent concentrations of both parameters were considerably higher than the design criteria, and the flow was lower than the design flow. Therefore, the operating procedure should be modified to incorporate the higher than anticipated influent concentrations.

Significant concentrations of ammonia nitrogen, 19.5 mg/l, organic nitrogen, 7.2 mg/l, and total phosphorus, 15.2 mg/l are discharged from the plant to the Snapper Creek Canal.

The operator of this plant did not inform us of the chlorination in the effluent of the polishing pond until the study was completed. The samples collected during the study were from the point where the chlorine was added, allowing no contact time. On January 15, 1971, grab samples were collected near the end of the outfall line. The fecal and total coliform concentrations found were 130 and <18 MPN per 100 ml.

The daily values for all parameters are presented in the attached Field and Data Summary Sheets.

DISCUSSION OF PLANT OPERATION

General appearance of the plant is good. "Housekeeping" is adequate and mechanical maintenance appeared to be sound during the survey period. However, the appearance of effluent from the plant and from the polishing pond was poor. Color was evident and there was visible evidence of either suspended or settleable solids. Copies of laboratory analyses were provided for the months of August through November 1970. These analyses indicate a higher degree of removal than would be expected from visual inspection of the effluent. The mixed liquor suspended solids (MLSS) was maintained lower than recommended in order to reduce the problem of scumming, or heavy foaming. Review of their laboratory analyses indicate that removal efficiencies ranging from 93% to 99% were achieved when using this method of operation. However, our data indicates considerably lower removal efficiencies. Therefore, it is recommended that the plant be operated at normal MLSS ratios, and that the scumming problem be combatted by use of water spray. Further accurate analyses should be made to determine the plant efficiency under more normal operating procedures.

During the survey, we were misinformed regarding the chlorination procedure. Due to this, a bacteriological sample was collected in a manhole downstream from the wet well.

LAWRENCE W. OLINGER

ROBERT L. KING

Sheet 1 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

DATE OF VISIT December 9, 1970
PLANT NAME: Little Abner's Trailer Park
PLANT OWNER: Joab, Inc.
ADDRESS 400 N.W. 112th Ave.
TELEPHONE
COLLECTION SYSTEM – TYPE: Same
OWNER:
ADDRESS:
TELEPHONE

DESIGN AVERAGE DESIGN FLOW: 0.150 MGD YEAR COMPLETED: 1968
STREAM FLOW cfs | DURATION days FREQUENCY Yrs
CONSTRUCTION COST $60,000
POPULATION SERVED 1600 plus: school with 75 students, 7-11 Store, coin laundry, Italian restaurant, cleaners, and beauty parlor.

OPERATION ANNUAL COST $17,000 labor plus unknown quantity of supplies.
PERSONNEL 2 operators and Maintenance Supervisor.
LEVEL OF CERTIFICATION None
CONDITION OF EQUIPMENT Fair
OUTFALL TYPE SIZE LENGTH
DISCHARGED TO: Snapper Creek WATER COURSE MILEAGE:
LATITUDE LONGITUDE
TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)
Davco plant and oxidation lagoon.

SLUDGE TREATMENT Aerobic digester as part of Davco unit.

DISPOSAL None disposed of at present.

REMARKS

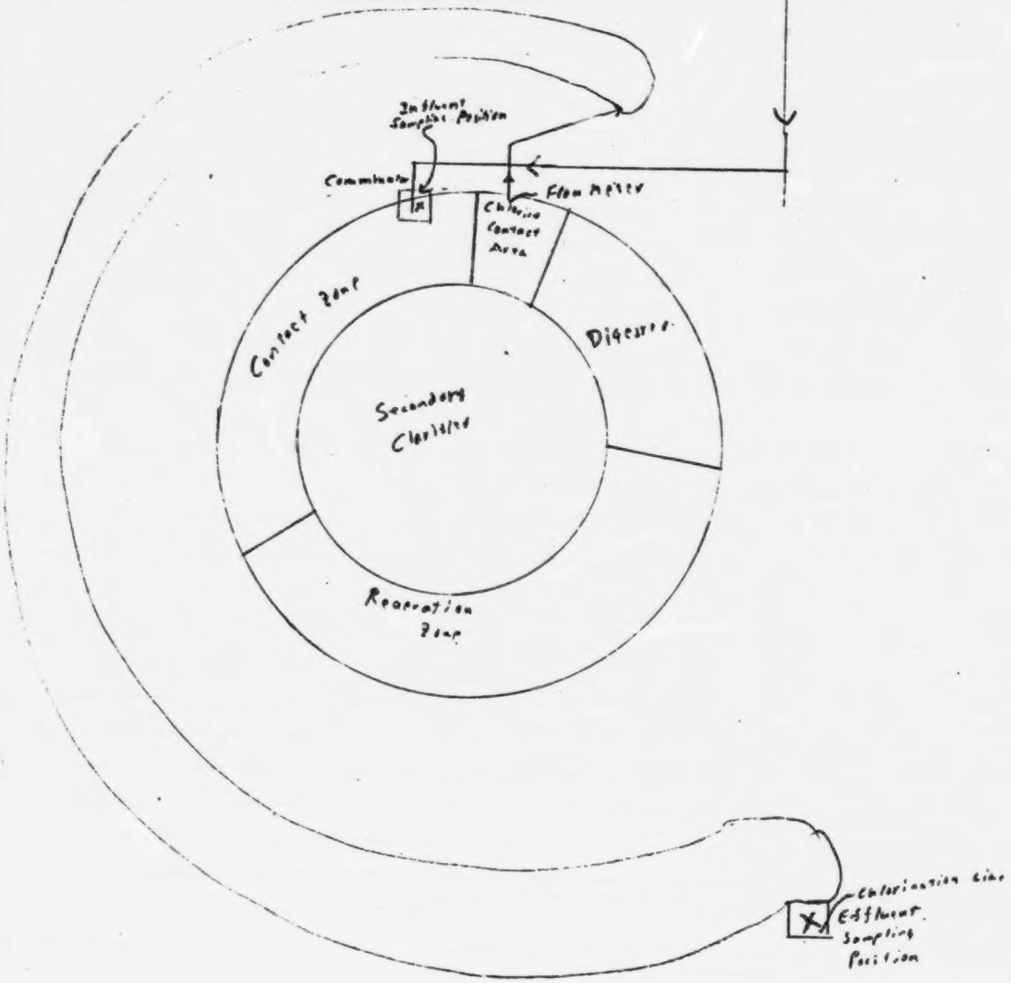
PREPARED BY: Robert [illegible] King

2 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Little Abner's Trailer Park

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY:

Sheet 3 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT - DATA SUMMARY

PLANT Little Abner STP

DATE - OFF		12/7/70	12/8/70	12/9/70	12/10/70	12/11/70	AVERAGE
FLOW - MGD		0.01	0.041	0.105	0.103	0.100	0.072
5 DAY B O D mg/l	INFLUENT	274	> 738	438	333	230	> 402
	EFFLUENT	52	43.4	52.7	51.0	64.0	52
	IN - OUT		> 694.6	385.3	282	166	
	% REMOVAL	81	> 94.1	88.0	84.7	72.2	> 84.1
	LOAD-lbs/day	4	14	46	44	53	32
C O D mg/l	INFLUENT	597	1219	791	829	721	831.4
	EFFLUENT	144	607	561	553	493	471.6
	IN - OUT	453		430	276	228	
	% REMOVAL	75.9	50.2	54.4	33.3	31.6	49.1
	LOAD -lbs/day	12	208	491	475	411	319
T S S mg/l	INFLUENT	260	320	588	472	112	350
	EFFLUENT	4	170	192	30	12	80
	IN - OUT	256	150		442	100	
	% REMOVAL	98.5	46.9	67.3	93.6	89.2	74.1
	LOAD- lbs/day	0	[illegible]	168	26	10	52
V S S mg/l	INFLUENT	224	44	580	132	80	212
	EFFLUENT	6	24	110	10	12	32
	IN - OUT	218	20	470	122	68	
	% REMOVAL	97.3	45.5	81	92.4	85	80.2
	LOAD - lbs/day	1	[illegible]	[illegible]	9	10	25
Settlable Solids ml/l	INFLUENT	3	24	28	8	6	14
	EFFLUENT	0.1	0.3	1.5	1.0	1.0	0.8
	IN - OUT	2.9	23.7	26.5	7	5	
	% REMOVAL	96.7	98.7	94.6	87.5	83.3	92.2
T O C mg/l	INFLUENT	170	307.5	217.5	173	155	207
	EFFLUENT	14	34	45	80	130	77
	IN - OUT	156	273.5	172.5	135	25	
	% REMOVAL	91.7	[illegible]	79.3	36.8	16.1	57.2
	LOAD - lbs/day	8	12	39	69	108	47

INFLUENT BOD POPULATION EQUIVALENT = ________

EFFLUENT BOD POPULATION EQUIVALENT = ________

LOAD = FLOW (MGD) × EFFLUENT (mg/l) × 8.34 = lbs/day

Sheet 4 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT Little River STP

DATE OFF		12/7/70	12/8/70	12/9/70	12/10/70	12/11/70	AVERAGE or MEDIAN*
FLOW - MGD		0.01	0.041	0.105	0.103	0.100	0.072
KTELDAHL NITROGEN as N	CONC.-mg/l	24.1	30.8	27.4	29.1	22.1	26.7
	LOAD-lbs/day	2	11	24	25	18	16
AMMONIA NITROGEN as N	CONC.-mg/l	18.8	20.0	19.4	18.8	20.7	19.5
	LOAD-lbs/day	2	7	17	16	17	12
ORGANIC NITROGEN as N	CONC.-mg/l	5.3	10.8	8.0	10.3	1.4	7.2
	LOAD-lbs/day	0	4	7	9	1	4
NO_2 -NO_3 as N	CONC.-mg/l	1.0	0.6	0.2	1.0	0.3	.6
	LOAD-lbs/day	0	0	0	1	0	0
TOTAL PHOSPHORUS AS P	CONC.-mg/l	13.3	15.7	18.5	16.5	12.0	15.2
	LOAD-lbs/day	1	5	16	14	10	9
CHLORIDE	CONC.-mg/l	83	80	73	72	89	79.4
TOTAL COLIFORM	CONC.-MPN/100ml	24000	3,300	7000	49,000	<18	7000
Fecal COLIFORM	CONC.-MPN/100ml	400	790	2400	640	<18	640
		1-15-71					
TOTAL COLIFORM	MPN/100 ml.	130					
FECAL COLIFORM	MPN/100 ml.	<18					

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

Sheet 5 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

PLANT Little Abner S.T.P.

							AVERAGE
DATE ON		6 Dec 70	7 Dec 70	8 Dec 70	9 Dec 70	10 Dec 70	
TIME ON		0730	0800	0805	0858	0918	
DATE OFF		7 Dec 70	8 Dec 70	9 Dec 70	10 Dec 70	11 Dec 70	
TIME OFF		0800	0805	0858	0918	0915	
FLOW	START	42150800	42161400	42202600	42311400	42415800	
	END	42161400	42202600	42311400	42415800	42515800	
	TOTAL	10,600	41,200	108800	104,400	100000	
	24 hr. Flow Rate	10,384	41,103	104,500	103,000	100,000	71,877
INF.	TEMP. ON	24.7°C	25.2°C	25.3°C	25.1°C	26.5°C	25.4
	PH - ON	8.42	7.62	8.48	–	10.1 6.8	7.8
Polishing Pond EFFLUENT	TEMP - ON	21.5°C	21.9°C	22.4°C	23.3°C	23.1°C	22.4
	PH - ON	6.31	6.62	6.7	–	10.2 6.77	6.6
	Cl. Residual	* 0	0	<.25	0/white		0
	CHLORINE-ON	–	–	–	–		
	CHLORINE-OFF	–	–	–	–	–	
	ON-OFF-lbs	–	–	–	–	–	

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
6 Dec 70	Normal	Normal		GAE
GAE				
7 Dec 70	Kept samples from pond a exit of final weir. Pop up abs. breaking up +	NORMAL	Thirteen samples at infl. All composited	GAE
	passing thru weir weir suds observed	PLT. op. said first time he has seen suds in PLT.		GAE
8 Dec 70	Suds in eff pit after weir	Skimmer outlet in clarifier uses liquid.		GAE
9 Dec 70	Suds + mosquito larve (live) in pond after final weir	Clarifier + aerator sides scrubbed down for algae	OVER	G.A.E.
10 Dec 70	Suds, insects + larve evident.	NORMAL	OVER	G.A.E.
11 Dec 70	Very little foam. High level in pond after final weir	NORMAL	OVER	G.A.E.

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from Leisure City Wastewater Treatment Plant.

Introduction.

The plant is a contact stabilization unit with final effluent flowing into a sand filter. Primary contacts were Messrs. Ray Coberly of Rex Utilities and Robert Cuevas of Greenleaf/ Telesca, Engineers and Architects.

An average flow through the Leisure City Wastewater Treatment Plant of 0.296 million gallons per day was measured during the study. Calculations of average removal efficiencies do not include samples taken on January 5, 1971, since these samples were taken during a period when the plant was malfunctioning. However, this condition was considered in the overall evaluation of plant performance. The average five-day biochemical oxygen demand of the influent and effluent were 237.8 and 31.3 milligrams per liter respectively. An average biochemical oxygen demand of 76 pounds per day was discharged to the sand filter and subsequently to ground water. The average influent total suspended solids concentration was 437 milligrams per liter and an average loading of 175 pounds per day was discharged at an average concentration of 73.3 milligrams per liter. The effluent was consistently and effectively chlorinated on all four days where grab samples were taken.

The plant does not meet the proposed State of Florida performance criteria of 90 percent treatment. On January 5, 1971, BOD_5 and total suspended solids removal efficiency was negative, with a higher BOD_5 and total suspended solids concentration reported in the effluent than in the influent for that sampling period. On the remaining days the average BOD_5 removal efficiency was 86.8 percent and that for total suspended solids was 81.2 percent. The average removal efficiency was calculated from the daily removal efficiencies, excluding the efficiency for January 5, 1971.

The following are recommended to improve plant operations:

1. Design of the plant should be reviewed and updated to accomplish 90 percent removal of BOD_5.

2. Mechanical maintenance be improved to reduce downtime of the secondary clarifier.

3. Review of staffing requirements be made to insure adequate personnel for proper supervision and mechanical maintenance of the plant.

4. Modification in the operation of the clarifiers to increase the removal of solids, or the installation of additional devices to reduce solids in the plant effluent.

MR. TRAINA: How do you manage to get more BOD in the effluent than you have in the influent? That is rather interesting.

You don't have to comment on that. We are just sort of interested.

MR. PATTON: Mr. Chairman, I have a comment that I would like to make at this point.

I notice Mr. Olinger a couple of times was talking about the proposed 90 percent treatment requirements. These are not proposed. These are in effect.

Number two, these call for a minimum of 90 percent treatment efficiency, not less than.

And also there is a date in the standards, in Chapter 17-3, which says "January 1,1973," but it also says "as expeditiously as possible."

We would just like to have these points in the record for clarity.

MR. WHITE: Thank you, Mr. Patton.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from
Leisure City Waste Water Treatment Plant
Owned by Rex Utilities, Inc.
1522 Harding Lane
Leisure City, Dade County, Florida
February 12, 1971

INTRODUCTION

The Leisure City Waste Water Treatment Plant was surveyed during the period January 3 - 8, 1971. The plant is a contact stabilization unit with final effluent flowing into a sand filter. Serco automatic samplers were utilized to collect five 24-hour composites of influent and effluent after chlorination. Daily grab samples were taken after chlorination, for chlorine residual, temperature, pH, and total and fecal coliform. Messrs. Terry Davis and Joe Hopson were sample collectors. Primary contacts were Messrs. Ray Coberly of Rex Utilities, and Robert Cuevas of Greenleaf/Telesca, Engineers and Architects.

SUMMARY AND CONCLUSIONS

An average flow through the Leisure City Waste Water Treatment Plant of 0.296 MGD was measured during the study. Calculations of average removal efficiencies do not include samples taken on January 5, 1971, since these samples were taken during a period when the plant was malfunctioning. However, this condition was considered in the overall evaluation of plant performance. The average five-day biochemical oxygen demand (BOD_5) of the influent and effluent were 237.8 and 31.3 mg/l, respectively. An average

BOD_5 of 76 lbs. per day was discharged to the sand filter and subsequently to ground water. The average influent total suspended solids concentration was 437 mg/1 and an average loading of 175 lbs. per day was discharged at an average concentration of 73.3 mg/1. The effluent was consistently and effectively chlorinated on all four days where grab samples were taken.

The plant does not meet the proposed State of Florida performance criteria of 90% treatment. On January 5, 1971, the BOD_5 and total suspended solids removal efficiency was negative, with a higher BOD_5 and suspended solids concentration recorded in the effluent than in the influent for that sampling period. On the remaining days the average BOD_5 removal efficiency was 86.8% and that for total suspended solids was 81.2%. The average removal efficiency was calculated from the daily removal efficiencies, excluding the efficiency for January 5, 1971.

The following are recommended to improve plant operations:

1. Design of the plant should be reviewed and updated to accomplish 90% removal of BOD_5:

2. Mechanical maintenance be improved to reduce down-time of the secondary clarifier.

3. Review of staffing requirements be made to ensure adequate personnel for proper supervision and mechanical maintenance of the plant.

4. Modification be made in the operation of the clarifiers to increase the removal of solids, or the installation of additional devices to reduce solids in the plant effluent.

INVENTORY

The plant is designed for an average flow of 0.63 MGD. Major components of the plant are as follows:

1. Comminutor with bar rack.
2. Mixing tank, designed for a detention time of 2.5 hours.
3. Reaeration tank, designed for a detention time of 5.2 hours.
4. Three secondary clarifiers, designed for a detention time of 2.7 hours, with sludge return to the reaeration tank.
5. Chlorine contact tank, designed for a detention time of 61.5 minutes.
6. Six sand filters (area of 14,000 square feet each) with flow to ground water.

DISCUSSION OF RESULTS

The average flow during the study period was 0.296 MGD, which is well under the 0.63 MDG design flow for this plant. The average total chlorine residual during the study was 2.3 mg/l and disinfection of the effluent was effective.

The pollutional strength of the discharge and the efficiency of the plant were determined by the five-day biochemical oxygen demand (BOD_5), chemical oxygen demand (COD) and the total organic carbon (TOC) tests, with performance on January 5, 1971 excluded from calculation of the average. The average BOD_5 of the effluent was 31.3 mg/l and an average of 76 lbs.

per day was discharged to the sand filter and subsequently to ground water. The removal efficiencies of BOD_5 varied from 85.1% to 88.0% for an average of 86.8%, under normal plant operation. This consistent removal efficiency indicates a need for redesign of the plant to accomplish the required 90% removal efficiency. The average removals of COD and TOC were 87.1% and 80.8%, respectively.

The average removal of total suspended solids (TSS) was 81.2%, with the exception of January 5, 1971, where a higher concentration of suspended solids was observed in the effluent than in the influent. The visual appearance of the effluent confirms the fact that the labeling of the samples was not mixed, nor were analyses reported incorrectly. The average quantity of TSS in the effluent was 73.3 mg/l or 175 lbs. per day. The plant is efficient in removing settleable solids since an average of 98.3% was removed.

Significant quantities of nutrients are discharged by this plant, in all forms of nitrogen except nitrite-nitrate.

Daily values of the data collected during this study are presented in the attached Field and Data Summary Sheets.

DISCUSSION OF OBSERVATIONS

General appearance, "housekeeping" and mechanical maintenance were fair during the survey. Visual appearance of the effluent was poor during the first two days of the survey, but improved somewhat as the survey progressed. This is reflected in the values for both BOD_5 and total suspended solids. Laboratory analyses can be correlated with the operational problems observed during the survey. A visual inspection of the clarifiers on January 4, 1971, indicated that the north clarifier appeared to be septic, with some solids carry-over. Upon my arrival at the plant on January 5, 1971, this clarifier was out of operation and I was informed by the operator that a pump had been out of commission, causing heavy sludge carry-over. The pump was repaired and the clarifier placed in operation during the operating period on January 5. On January 6, the clarifier was operating properly, with no solids carry-over. The operator indicated that he had been unaware of any problem until January 5, but my own inspection revealed evidence of the problem on January 4. In my opinion the problem could have been averted by closer observation of plant operation by the operator.

The primary problem in this plant appears to be a shortage of personnel. The plant has one operator who functions as plant supervisor, plus three laborers, with no second or third operating shift. This extra workload does not allow the operator to fully supervise operation of the plant, thereby causing an apparent lack of control over plant operation. I would recommend the addition of operating personnel, since I feel that the problem on January 5, 1971, could have been averted had the chief operator had time to adequately supervise plant operations.

ROBERT L. KING

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

Sheet 1 of 5

DATE OF VISIT January 12, 1971
PLANT NAME: Leisure City - Kings Highway and Naranja Rd.
PLANT OWNER: Rex Utilities, Inc.
ADDRESS 1522 Harding Lane, Leisure City, Florida
TELEPHONE
COLLECTION SYSTEM – TYPE: Separate.
OWNER: Same
ADDRESS:
TELEPHONE

DESIGN AVERAGE DESIGN FLOW: 0.63 MGD YEAR COMPLETED: 1969
STREAM FLOW cfs DURATION days FREQUENCY Yrs
CONSTRUCTION COST
POPULATION SERVED 9,000

OPERATION ANNUAL COST No data.
PERSONNEL Operator and three laborers.
LEVEL OF CERTIFICATION "C"
CONDITION OF EQUIPMENT Fair

OUTFALL TYPE Sand filter. SIZE LENGTH
DISCHARGED TO: Subsurface WATER COURSE MILEAGE:
LATITUDE LONGITUDE

TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)

Barminutor, contact stabilization unit, secondary clarifiers, chlorine contact chamber, sand filters.

SLUDGE TREATMENT Two stage aerobic digesters, then to sludge beds.

DISPOSAL To dump.

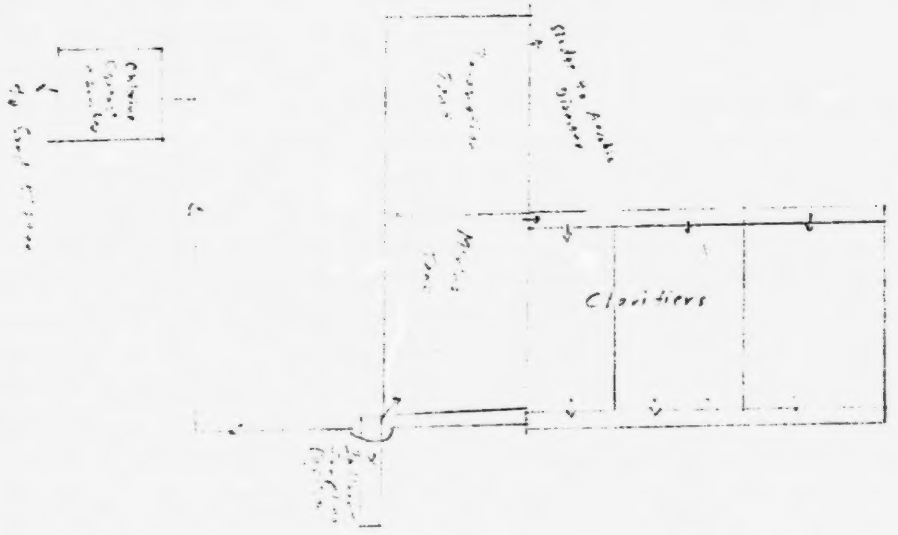
REMARKS

2 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Leisure City

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY: Robert L. King

Sheet 3 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

PLANT Leisure City (Rex)

DATE - OFF		1-4-71	1-5-71	1-6-71	1-7-71	1-8-71	AVERAGE *
FLOW - MGD		0.244	0.295	0.310	0.316	0.318	.296
5 DAY B O D mg/l	INFLUENT	248	243	275	233	190	237.8
	EFFLUENT	37	555	33	29	26	31.3
	IN - OUT	211		242	204	164	
	% REMOVAL	85.1	σ	88.0	87.6	86.3	86.8
	LOAD-lbs/day	75		85	76	69	76
C O D mg/l	INFLUENT	789	1,323	724	724	665	755
	EFFLUENT	70	2,278	92	85	123	92.5
	IN - OUT	719	—	632	639		
	% REMOVAL	91.1	—	87.3	88.3	81.5	87.1
	LOAD -lbs/day	142		238	224	326	233
T S S mg/l	INFLUENT	440	640	472	280	352	437
	EFFLUENT	120	980	60	45	68	73.3
	IN - OUT	320	—	412	235	284	
	% REMOVAL	72.7		87.3	83.9	80.7	81.2
	LOAD- lbs/day	244		155	119	180	175
V S S mg/l	INFLUENT	428	628	412	276	324	413
	EFFLUENT	110	920	58	42	72	70.5
	IN - OUT	318	—	354	234	252	
	% REMOVAL	74.3		85.9	84.8	77.8	80.7
	LOAD –lbs/day	224		150	111	191	169
Settlable Solids ml/l	INFLUENT	12	9	8	4	12	9.0
	EFFLUENT	.2	>40	0.0	.1	0.3	0.15
	IN - OUT	11.8	—	8.0	3.9	11.7	
	% REMOVAL	98.3		100	97.5	97.5	98.3
T O C mg/l	INFLUENT	153	138	208	165	150	163
	EFFLUENT	26	460.0	28.0	50	24	32
	IN - OUT	127	—	180	115	126	
	% REMOVAL	83.0		86.5	69.7	84.0	80.8
	LOAD - lbs/day	53		72	132	64	80

INFLUENT BOD POPULATION EQUIVALENT =______

EFFLUENT BOD POPULATION EQUIVALENT =______

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

* Effluent data for 1/5/71 Not Included in average

Released
From The Desk Of

Sheet 4 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT Leisure City

DATE - OFF		1/4/71	1/5	1/6	1/7	1/8	AVERAGE or MEDIAN*
FLOW - MGD		0.2[illegible]	0.295	0.310	0.316	0.318	0.296
KJELDAHL NITROGEN as N	CONC.-mg/l	9.1	154.6	15.9	19.4	17.[illegible]	43.4
	LOAD-lbs/day	19	360	41	51	47	108
AMMONIA NITROGEN as N	CONC.-mg/l	6.6	13.6	12.2	16.8	16.2	13.1
	LOAD-lbs/day	13	33	32	44	43	33
ORGANIC NITROGEN as N	CONC.-mg/l	2.5	141.0	3.7	2.6	1.6	303
	LOAD-lbs/day	5	347	10	7	4	75
NO_2 -NO_3 as N	CONC.-mg/l	2.1	1.0	0.2	0.2	0.2	0.7
	LOAD-lbs/day	4	2	1	1	1	2
TOTAL PHOSPHORUS AS P	CONC.-mg/l	12.0	59.2	9.2	10.2	8.5	19.8
	LOAD-lbs/day	24	146	24	27	23	49
CHLORIDE	CONC.-mg/l	53	46	59	56	52	
TOTAL COLIFORM	CONC.-MPN/100ml	20	13		20	40	30
Fecal COLIFORM	CONC.-MPN/100ml	<18	<18		<18	<18	<18

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

Sheet 5 of 5
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PLANT Leisure City (Rex)

DATE ON		3 Jan, 71	4 Jan, 71	5 JAN 71	6 Jan, 71	7 Jan, 71	AVERAGE
TIME ON		0800	0840	10.10	0924	0930	
DATE OFF		4 Jan, 71	5 JAN 71	6 Jan, 71	7 Jan, 71	8 Jan, 71	
TIME OFF		0840	1010	0924	0930	0900	
FLOW	START	120886	121137	121450	121750'	122067	
	END	121137	121450'	121750	122067'	122378	
	TOTAL x1000	251	313	300	317	311	
	24 hr. Flow Rate	243,890	294,588	310,344	315,684	317,618	296,425
INF.	TEMP. ON	25°	26°	25	26	25	25.2
	PH - ON	7.0	6.9	7.1	7.0	7.3	7.1
EFFLUENT	TEMP - ON	24°	24.5°	24.5	25	25	24.6
	PH - ON	7.[illegible]	6.9	7.0	7.2	7.3	7.1
	Cl. Residual	>2.5	1.4	2.5	>2.5	2.5	2.3
	CHLORINE-ON						
	CHLORINE-OFF						
	ON-OFF-lbs						

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
3 Jan, 71	Normal	Normal	—	
4 Jan, 71	Normal	Normal over-	Eff - 2, 7, 10, 13, 16, 19, 22 - blank	
5 JAN 71	HEAVY SEDIMENT in effluent	NORTH SECONDARY CLARIFIER DOWN ON ARRIVAL. Used all samples collected as composit.	Clock malfunction on Eff. #1, 2, 3, 4, 5, 6, 7, 8, 22, 23, 24 replaced clock	over
6 Jan, 71	Eff had fine suspended material -	North clarifier OK Slight flock in other of [illegible].	Inf - #9-10 empty due to clock malfunction	over
7 Jan.	Same as above	Same as above	Inf - #5, 6, 8 18 - blank	
8 Jan	Same as above	Flock in clarifiers	Inf - #4, 18 & 20 blank	

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from Pan American Hospital Wastewater Treatment Plant.

Introduction.

The plant is a contact stabilization unit with tertiary treatment. It is owned by the hospital, but operated under contract by PELCO, Pollution Elimination Corporation. Final effluent flows into the Tamiami Canal. Primary contact was Mr. James Barlow of PELCO.

Summary and conclusions.

The average five-day biochemical oxygen demand concentrations in the influent was 209 milligrams per liter and that in the effluent was 5 milligrams per liter. The average load discharged to the Tamiami Canal was 1 pound per day. The average total suspended solids concentration in the influent and effluent was 248 and 65 milligrams per liter respectively.

The average chlorine residual in the effluent was 3.4 milligrams per liter. The median total and fecal coliform concentrations were both less than 18 MPN per 100 ml and a high total coliform concentration of 130 MPN per 100 ml was observed.

The proposed State of Florida performance criteria requires 90 percent treatment. The plant met this requirement for BOD_5 with an average removal efficiency of 97.8 percent. The requirement was not met for total suspended solids since the average removal efficiency was 60.1 percent. After our study of the plant, procedures to correct the solids problem were being investigated.

It is recommended that the following be instituted:

1. The installation of a flow measuring device.

2. The installation of an additional holding tank for the influent.

MR. REED: At least we have one to cheer about, partially, suspended solids.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from
Pan American Hospital Waste Water Treatment Plant

5959 N.W. 7th Street
Miami, Dade County, Florida
February 12, 1971

INTRODUCTION

The Pan American Hospital Waste Water Treatment Plant was surveyed during the period December 6 - 11, 1970. The plant is a contact stabilization unit with tertiary treatment. It is owned by the Hospital, but operated under contract by PELCO (Pollution Elimination Corporation). Final effluent flows into the Tamiami Canal. The Serco automatic samplers were utilized to collect five 24-hour composites of influent and effluent. after chlorination, and daily grab samples for pH, temperature, chlorine residual and total and fecal coliform were collected. Messrs. Terry Davis and George Egermier were sample collectors. Primary contact was Mr. James Barlow of PELCO.

SUMMARY AND CONCLUSIONS

The average five-day biochemical oxygen demand (BOD_5) concentrations in the influent was 209 mg/l and that in the effluent was 5 mg/l. The average load discharged to the Tamiami Canal was 1 lb. per day. The average total suspended solids (TSS) concentrations in the influent and effluent were 245 and 65 mg/l respectively.

The average chlorine residual in the effluent was 3.4 mg/l. The median total and fecal coliform concentrations were both 13 MPN per 100 ml and a high total coliform concentration of 130 MPN per 100 ml was observed.

The proposed State of Florida performance criteria requires 90% treatment. The plant met this requirement for BOD_5 with an average removal efficiency of 97.6%. The requirement was not met for TSS since the average removal efficiency was 60.1%. After our study of the plant, procedures to correct the solids problem were being investigated. The average removal efficiencies and loadings were calculated from the daily values.

It is recommended that the following be instituted:

1. The installation of a flow measuring device.
2. The installation of an additional holding tank for the influent.

INVENTORY

The system consists of the following:

1. Holding tank. This is a 5,000 gallon tank with nominal aeration. It is utilized as a surge tank during peak loading periods.
2. Contact stabilization tanks. Seven small tanks in parallel.
3. Final clarifier.
4. Equalizer tank.
5. Chlorine contact chamber.
6. Jetflo tertiary treatment system.

Reproduced from best available copy.

DISCUSSION OF RESULTS

There is no flow meter at the Pan American Hospital Waste Water Treatment Plant and the design flow of 0.036 MGD was used to calculate the waste loads discharged into the Tamiami Canal.

The average influent and effluent BOD_5 concentrations during the study period were 209 and 5 mg/l respectively, and with an average removal efficiency of 97.[illegible]%, one lb. per day was discharged to the Canal. The plant also had average removal efficiencies of 92.2% for chemical oxygen demand and [illegible].3% for total organic carbon.

Total suspended solids removal was extremely erratic and removal efficiencies ranged from 6.9% to 93.7% for an average of 60.1%. This problem appears to be due to a floc formed in the chlorine after the contact chamber. An attempt to eliminate this problem by chlorinating prior to the tertiary treatment unit filter will be initiated if the problem continues. The average removal efficiency of settleable solids was 99.5%.

The effluent of this plant was highly nitrified and an average of 4 lbs. per day of nitrite-nitrate nitrogen were discharged at an average concentration of 12.4 mg/l. Practically no organic or ammonia nitrogen were discharged. The average total phosphorus concentration in the effluent was 2.1 mg/l for an average load of less than one lb. per day.

The average chlorine residual in the effluent was 3.4 mg/l and the median total and fecal coliform concentrations were both 1 MPN per 100 ml. However, on December 11, 1970, the chlorine residual was low at 0.4 mg/l and a relatively high concentration of coliform bacteria, 130 MPN per 100 ml, was present. Since these wastes are produced in a hospital the occurrence of relatively high concentrations of bacteria in the effluent should be eliminated.

DISCUSSION

This plant has had a background of operational difficulties. The primary problem was the high peak loading, which precluded stabilization of operation. PELCO recommended installation of the present holding tank, which has been an aid in stabilization. However, at peak loads, this holding tank is insufficient. Approximately 6,000 gallons of raw sewage must be trucked daily to the Virginia Key facility, at a cost of approximately $1,500 per month. It is recommended that a larger holding tank be installed to eliminate the need for hauling excess raw sewage. With present operating personnel, and the apparent ability of the Hospital to withstand the cost of operation, the plant operation is excellent. However, loss of ability to fund the operation or degradation of operational quality, could cause these operational difficulties to reappear.

There was evidence of a light whitish floc in the effluent, which accounts for the low suspended solids removal. The floc is formed in the chlorine contact chamber. Mr. Barlow had plans to chlorinate the effluent prior to entry into the tertiary treatment system. This procedure might cause the floc to be removed in the filter system, which is a part of the tertiary treatment system. On January 14, 1971, this matter was discussed with Mr. Barlow by telephone. Mr. Barlow stated that he had made necessary equipment change to accomplish chlorination prior to the tertiary system but had not begun the operation, since there had been no further incidence of the floc.

LAWRENCE W. OLINGER

ROBERT L. KING

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

Sheet 1 of 5

DATE OF VISIT: December 9, 1970
PLANT NAME: Pan American Hospital Waste Water Treatment Plant
PLANT OWNER: Pan American Hospital
ADDRESS: 5959 N.W. 7th Street, Miami, Florida
TELEPHONE:
COLLECTION SYSTEM – TYPE: Separate
OWNER: Same
ADDRESS:
TELEPHONE:

DESIGN AVERAGE DESIGN FLOW: 0.036 MGD YEAR COMPLETED: 1970
STREAM FLOW cfs DURATION days FREQUENCY Yrs
CONSTRUCTION COST $65,000
POPULATION SERVED

OPERATION ANNUAL COST $12,000 for labor plus $18,000 for septic tank trunks.
PERSONNEL Operated by PELCO (Pollution Elimination Corp.) as part of other functions.
LEVEL OF CERTIFICATION C
CONDITION OF EQUIPMENT Good

OUTFALL TYPE SIZE LENGTH
DISCHARGED TO: Tamiami Canal WATER COURSE MILEAGE:
LATITUDE LONGITUDE

TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)
Holding tank, contact stabilization, final clarifier, jet-flow tertiay system.

SLUDGE TREATMENT None
DISPOSAL When needed, hauled to Virginia Key

REMARKS

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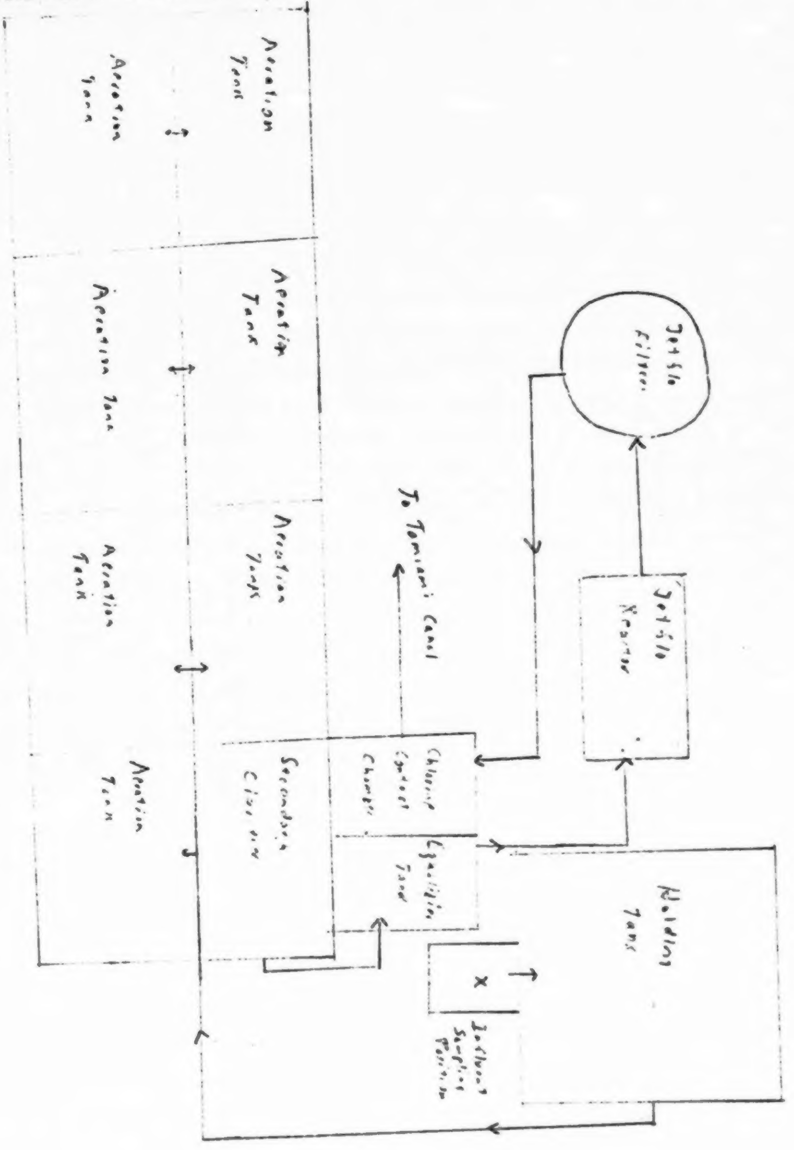
LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT Pan American Hospital

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY:

Sheet 3 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

FLANT Pan Am Hosp

		12/7	12/8	12/9	12/10	12/11	AVERAGE
DATE - OFF		12/7	12/8	12/9	12/10	12/11	AVERAGE
FLOW - MGD *		0.036	0.036	0.036	0.036	0.036	—
5 DAY BOD mg/l	INFLUENT	[illegible]	170	172.7	209.6	236	207
	EFFLUENT	[illegible]	2.1	6.3	4.3	4.8	5
	IN - OUT		[illegible]	[illegible]	205.3		
	% REMOVAL	96.6	[illegible]	96.4	97.9	98.0	97.8
	LOAD-lbs/day	3	0	2	1	1	1
C O D mg/l	INFLUENT	[illegible]	[illegible]	640	650	698	631
	EFFLUENT	36	[illegible]	44	41	41	48
	IN - OUT	[illegible]	[illegible]	[illegible]	609	657	
	% REMOVAL	[illegible]	[illegible]	93.2	93.7	94.1	92.2
	LOAD -lbs/day	11	24	13	12	12	14
T S S mg/l	INFLUENT	136	34	412	216	440	248
	EFFLUENT	[illegible]	25	26	201	53	65
	IN - OUT	[illegible]	9	[illegible]	15	387	
	% REMOVAL	[illegible]	[illegible]	93.7	06.9	88	[illegible]
	LOAD- lbs/day	6	8	8	60	16	20
V S S mg/l	INFLUENT	12	14	[illegible]	[illegible]	220	134
	EFFLUENT	[illegible]	61	24	30	43	29
	IN - OUT	4		[illegible]	2	177	
	% REMOVAL	33.3	—	[illegible]	03.9	[illegible]	53.8
	LOAD - lbs/day	2	6	7	15	13	9
Settlable Solids ml/l	INFLUENT	[illegible]	5	[illegible]	16	11	15
	EFFLUENT	nil	nil	nil	.4	nil	<.1
	IN - OUT		[illegible]	[illegible]	15.6	11	
	% REMOVAL	[illegible]	[illegible]	[illegible]	97.5	100	99.5
T O C mg/l	INFLUENT	113	80	167.5	[illegible]	[illegible]	121.6
	EFFLUENT	7	12.5	12	17.5	[illegible]	13.5
	IN - OUT	[illegible]	— [illegible]	155.5	90	121.5	
	% REMOVAL	[illegible]	[illegible]	[illegible]	83.7	86.8	88.9
	LOAD - lbs/day	2	4	4	5	6	4

INFLUENT BOD POPULATION EQUIVALENT = ________

EFFLUENT BOD POPULATION EQUIVALENT = ________

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

* PLANT DESIGN FLOW

From The Desk Of

Sheet 4 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT Pan Am Hosp

DATE - OFF		12/7	12/8	12/9	12/10	12/11	AVERAGE or MEDIAN*
FLOW - MGD		0.036	0.036	0.036	0.036	0.036	0.036
KTELDAHL NITROGEN as N	CONC.-mg/l	1.4	1.4	1.7	2.2	2.8	1.9
	LOAD-lbs/day	0	0	1	1	1	1
AMMONIA NITROGEN as N	CONC.-mg/l	0.2	1.0	0.3	1.6	0.4	0.7
	LOAD-lbs/day	0	0	0	0	0	0
ORGANIC NITROGEN as N	CONC.-mg/l	1.2	0.4	1.4	0.6	2.4	1.2
	LOAD-lbs/day	0	0	0	0	1	0
NO_2 -NO_3 as N	CONC.-mg/l	20.0	12.2	11.0	9.8	8.8	12.4
	LOAD-lbs/day	6	4	3	3	3	4
TOTAL PHOSPHORUS AS P	CONC.-mg/l	1.5	2.5	1.3	4.5	0.8	2.1
	LOAD-lbs/day	0	1	0	1	0	0
CHLORIDE	CONC.-mg/l	138	86	121	122	125	118.4
TOTAL COLIFORM	CONC - MPN/100ml	<18	<18	<18	<18	130	<18
Fecal COLIFORM	CONC - MPN/100ml	<18	<18	<18	<18	<18	<18

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

Sheet 5 of 5

PLANT PAN AM. HQ

DATE ON		6 Dec 70	7 Dec 70	8 Dec 70	9 Dec 70	10 Dec 70	AVERAGE
TIME ON		0820	0937	0936	1013	1047	☒
DATE OFF		7 Dec 70	8 Dec 70	9 Dec 70	10 Dec 70	11 Dec 70	☒
TIME OFF		0937	0936	1013	1047	1025	☒
FLOW	START	–	–	–	–	–	☒
	END	–	–	–	–	–	☒
	TOTAL	–	–	–	–	–	☒
	24 hr. Flow Rate	–	–	–	–	–	
INF.	TEMP. ON	27.8°C	27.0°C	29.7°C	29.4	28.4	28.5
	PH - ON	8.34	7.1*	6.7	–	* ~~10.6~~ 7.1	7.3
EFFLUENT	TEMP - ON	23.7°C	24.5°C	24.9°C	25.8°C	26.0°C	25.0
	PH - ON	3.6	5.13	7.25	–	*10.4 6.94	5.7
	Cl. Residual	7.5	4.0 EST	4.0 EST	1.0	.4 EST.	3.4
	CHLORINE-ON	–	–	–	–	–	
	CHLORINE-OFF	–	–	–	–	–	
	ON-OFF-lbs	–	–	–	–	–	

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
6 Dec 70	Normal/clear	1 aerator down		~~[illegible]~~ GAE
7 Dec 70	SMALL ROUNDED OPENINGS IN WHITE SOLIDS NORMAL/CLEAR	1 AERATOR DOWN SEE REVERSE	2 INF. BLANK 20 EFF BLANK 15 " SHORT. → 10TH INF TRIPPED AT SAME TIME	GAE
8 Dec 70	LIGHT GRN. TURBID WITH SMALL, ROUND FLOC. SUDS IN Cl2 CHAMBER	1 AERATOR DOWN WHITE SCUM ON SIDES OF Cl2 CONTACT CHAMBER.	16 EFF – 110 ML.	GAE
9 Dec 70	EFF. CLEAR WITH EVENLY DISPERSED LOOSELY COMPACTED (FLUFFY) FLOC. CAN SEE THRU SOLIDS	ALL AERATOR OPERATING SUDS IN Cl2 CHANNEL	OVER	GAE
10 Dec 70	SAME EXP. LESSER ~~[illegible]~~ AMOUNT.	SUDS IN Cl2 CHANNEL SEPARATE INF. NOT SAMPLED IS COLORE LIGHT GREEN/BLUE. 24 INF – 90 mL	OVER	GAE GAE
11 Dec 70	NORMAL	NORMAL	OVER	GAE
*	Ph [illegible]	[illegible] to meter	reading	

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from Peninsular Utilities Wastewater Treatment Plant.

The plant is a contact stabilization unit with final effluent presently flowing into Snapper Creek. Early in 1971 the effluent disposal will be accomplished by deep well injection. Primary contacts were Mr. A. E. Legall, Jr., and Mr. Steve Yateman, of General Waterworks Corporation.

Summary and conclusions.

The flow measurement device was not in operation during the study. The average flow reported by this plant of 2.5 MGD was used to determine the waste loads. The average influent five-day biochemical oxygen demand was 230 milligrams per liter and the average discharge loading was 502 pounds per day at an average concentration of 24 milligrams per liter. The average influent and effluent total suspended solids concentrations were 365 and 41 milligrams per liter respectively, The average chlorine residual in the effluent was 4.4 milligrams per liter and it was effectively chlorinated.

The proposed State of Florida performance criteria requires 90 percent treatment. This criteria was met for BOD_5 with an average efficiency of 90 percent and a minimum value of 87 percent. This plant does not meet the total suspended solids criteria with a removal efficiency of 89 percent and a minimum value of 86 percent.

L. W. Olinger

The only recommendation for this plant is that the flow meter be repaired as soon as possible.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from Peninsular Utilities Waste Water Treatment Plant

S. W. 97th Avenue and Kendall Drive
(Owned by General Waterworks Corporation)
1826 Ponce de Leon Boulevard
Coral Gables, Dade County, Florida
February 4, 1971

INTRODUCTION

The Peninsular Utilities plant was surveyed during the period December 13 - 18, 1970. The plant is a contact stabilization unit with final effluent presently flowing into Snapper Creek. Early in 1971, the effluent disposal will be accomplished by deep-well injection. The serco automatic samplers were utilized to collect five 24-hour composites of influent and effluent before chlorination. Messrs. Terry Davis and George Egermier were sample collectors. Primary contacts were Messrs. A. E. Legall, Jr., and Steve Yateman, of General Waterworks Corporation.

SUMMARY AND CONCLUSIONS

The flow measurement device was not in operation during the study. The average flow reported by the plant of 2.5 MGD, was used to determine the waste loads. The average influent five-day biochemical oxygen demand (BOD_5) was 230 mg/l and the average discharge loading was 502 lbs. per day at an average concentration of 24 mg/l. The average influent and effluent total suspended solids (TSS) concentrations were 365 and 41 mg/l, respectively. The average chlorine residual in the effluent was 4.4 mg/l and it was effectively chlorinated.

The proposed State of Florida performance criteria requires 90%

treatment. This criteria was met for BOD_5 with an average efficiency of 90% and a minimum value of 87%. This plant does not meet the TSS criteria with a removal efficiency of 89% and a minimum value of 86%. The average removal efficiencies were calculated from the daily removal efficiencies.

The only recommendation for this plant is that the flow meter be repaired as soon as possible.

INVENTORY

In the present operating configuration, major components are:

1. Comminutor.
2. Primary clarifier.
3. Two-cell contact tank with flow of sludge to a stabilization tank and recycling to the contact tank.
4. Two circular secondary clarifiers in parallel.
5. Chlorine contact chamber.
6. Pump chamber, and then to Snapper Creek.
7. Sludge flows to a waste sludge thickener (formerly a primary clarifier) and then to a two-stage aerobic digester. Sludge from the digesters is either trucked to Virginia Key or sent to drying beds.

DISCUSSION OF RESULTS

The flow meter was not in operation at this plant, hence, the average flow of 2.5 MGD reported in "Status Report for Sewage Treatment Plants in Dade County," September 1970 was used to calculate the loads discharged by the plant.

The average influent BOD_5 at this plant was 230 mg/l and the average effluent BOD_5 was 24 mg/l. The average BOD_5 removal efficiency was 90%, and 502 lbs. per day were discharged to Snapper Creek during the study period. The chemical oxygen demand (COD) and total organic carbon (TOC) tests were used in addition to the BOD_5 test to determine the pollutional strength of this waste. The removal efficiencies of COD and TOC for this plant were 87% and 85%, respectively. Also the effluent contained 1656 lbs. per day of COD and 406 lbs. per day of TOC.

The average TSS removal efficiency was 89%, with values ranging from 86 to 93%. The average influent TSS concentration was 365 mg/l and that in the effluent was 41 mg/l. The plant discharged an average of 701 lbs. per day of volatile suspended solids and 146 lbs. per day of fixed suspended solids. The average settleable solids removal was 99.6%.

The bulk of the nitrogen discharged by this plant was in the form of ammonia nitrogen with an average concentration and loading of 19.4 mg/l and 405 lbs. per day, respectively. Practically no organic nitrogen and nitrite-nitrate nitrogen were discharged. An average of 195 lbs. per day of total phosphorus was discharged at 9.5 mg/l.

The average chlorine residual in the effluent was 4.4 mg/l and as expected the effluent was satisfactorily disinfected.

Daily values are presented on the attached Field and Data Summary sheets.

DISCUSSION OF OPERATION

General appearance of the plant is excellent. "Housekeeping" and mechanical maintenance were good during the period. Visual appearance of the effluent was not the best observed thus far during the program, but was adequate. The principle problem in plant operation is the disposal of large volumes of waste sludge. At present, approximately 120,000 gallons of sludge is trucked daily to the Virginia Key plant. There was no flow recording device in operation during the survey. However, an effort was being made to repair the existing device.

ROBERT L. KING

LAWRENCE W. OLINGER

Sheet 1 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

DATE OF VISIT December 17, 1970
PLANT NAME: Peninsular Utilities (Snapper Creek)
PLANT OWNER: General Waterworks Corporation
ADDRESS 1826 Ponce de Leon Boulevard, Coral Gables, Florida
TELEPHONE
COLLECTION SYSTEM – TYPE: Separate
OWNER: Same
ADDRESS:
TELEPHONE

DESIGN | AVERAGE DESIGN FLOW: 2.0 [illegible] MGD YEAR COMPLETED: 1970
STREAM FLOW cfs | DURATION days FREQUENCY Yrs
CONSTRUCTION COST No data.
POPULATION SERVED 7,330 equivalent connections (≈ 25,655 population).

OPERATION | ANNUAL COST No data.
PERSONNEL 4 operators, 3 laborers, 1 lab technician, 2 lift station operators.
LEVEL OF CERTIFICATION "C" for all operators.
CONDITION OF EQUIPMENT Excellent
OUTFALL | TYPE SIZE LENGTH
DISCHARGED TO: Snapper Creek WATER COURSE MILEAGE:
LATITUDE LONGITUDE
TREATMENT | (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)

Comminutor, primary clarifier, contact stabilization unit, 2 secondary clarifiers (in parallel), chlorine contact chamber.

SLUDGE | TREATMENT Sludge thickening tank, two stage aerobic digestion.

DISPOSAL Trucked to Virginia Key.

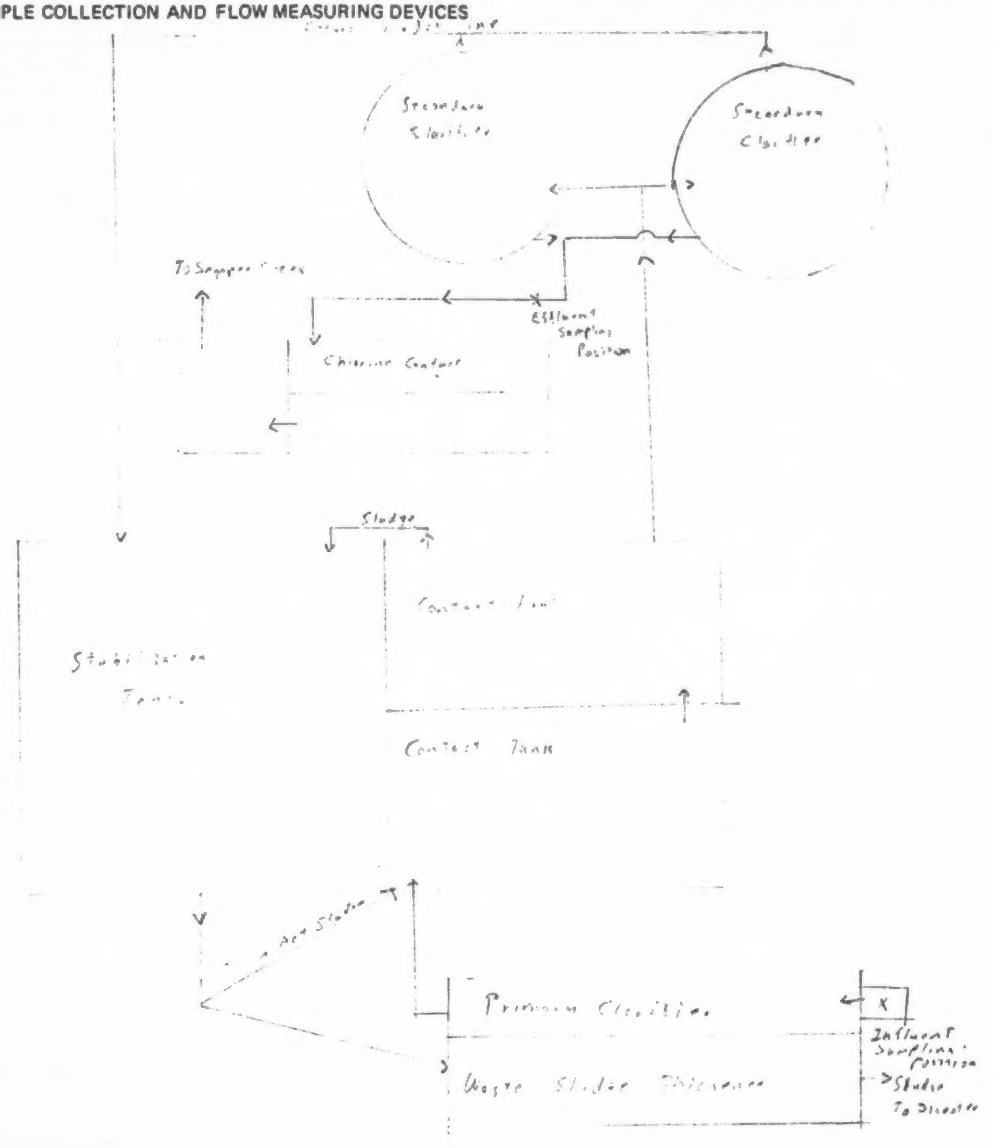
REMARKS |

2 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – SCHEMATIC DIAGRAM

PLANT PENINSULAR UTILITIES

DRAW COMPLETE FLOW DIAGRAM OF TREATMENT PLANT AND OUTFALL. LABEL EACH UNIT. SHOW LOCATIONS OF SAMPLE COLLECTION AND FLOW MEASURING DEVICES



PREPARED BY: Robert L. King

Sheet 3 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

PLANT (Penn STP) Gen. Waterworks. (Snapper Creek)

DATE - OFF		12/14/70	12/15	12/16/	12/17	12/18	AVERAGE
FLOW - MGD		2.5 *	2.5	2.5	2.5	2.5	
5 DAY BOD mg/l	INFLUENT	271	226	215	221	219	220
	EFFLUENT	27	27	20.4	28	17.9	24.1
	IN - OUT						
	% REMOVAL	90.0	[illegible]	90.5	87.3	91.9	89.5
	LOAD-lbs/day	563	563	425	584	373	502
COD mg/l	INFLUENT	1123	[illegible]	495	629	419	679
	EFFLUENT	81	[illegible]	70	80	86	79.4
	IN - OUT						
	% REMOVAL	[illegible]	[illegible]	85.9	87.3	79.5	86.9
	LOAD -lbs/day	1689	1668	1460	1668	1793	1656
TSS mg/l	INFLUENT	444	[illegible]	[illegible]	348	244	[illegible]
	EFFLUENT	60	54	[illegible]	34	26	41
	IN - OUT						
	% REMOVAL	86.5	85.6	93.0	90.2	89.3	[illegible]
	LOAD- lbs/day	1251	1126	605	709	542	847
VSS mg/l	INFLUENT	424	[illegible]	[illegible]	332	205	[illegible]
	EFFLUENT	56	49	[illegible]	28	14	33.6
	IN - OUT						
	% REMOVAL	86.9	86.4	94.9	91.6	93.4	90.6
	LOAD –lbs/day	1168	1022	438	584	292	701
Settlable Solids ml/l	INFLUENT	10	.3	[illegible]	9	8	[illegible]
	EFFLUENT	0.0	0.0	.1	.1	0.0	<.1
	IN - OUT						
	% REMOVAL	100	100	99.0	99.9	100	99.6
TOC mg/l	INFLUENT	195	87.5	160	125	142.5	142.0
	EFFLUENT	20.5	17.5	19	25	13.5	19.5
	IN - OUT						
	% REMOVAL	89.5	80.0%	88.1	80.0	[illegible]	[illegible]
	LOAD - lbs/day	427	365	396	521	323	406

INFLUENT BOD POPULATION EQUIVALENT = ________

EFFLUENT BOD POPULATION EQUIVALENT = ________

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

* AVERAGE FLOW REPORTED BY DADE CO., SEPT 1970 INVENTORY

Released

From The Desk Of Michael V. Polito MVP

Sheet 4 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

PLANT Peco STP/Sea [illegible] Works

DATE - OFF		12/14	12/15	12/16	12/17	12/18	AVERAGE or MEDIAN*
FLOW - MGD		2.5	2.5	2.5	2.5	2.5	
KTELDAHL NITROGEN as N	CONC.-mg/l	22.1	20.5	20.2	18.8	20.7	20.5
	LOAD-lbs/day	461	427	421	392	432	427
AMMONIA NITROGEN as N	CONC.-mg/l	21.6	19.2	18.8	18.8	18.8	19.4
	LOAD-lbs/day	450	400	392	392	392	405
ORGANIC NITROGEN as N	CONC.-mg/l	0.5	1.3	1.4	—	1.9	1.3
	LOAD-lbs/day	10	27	29	—	40	27
NO$_2$ -NO$_3$ as N	CONC.-mg/l	0.02	0.04	0.02	0.02	0.02	.02
	LOAD-lbs/day	0	1	0	0	0	0
TOTAL PHOSPHORUS AS P	CONC.-mg/l	11.7	10.4	7.3	9.0	8.4	9.4
	LOAD-lbs/day	244	217	152	188	175	195
CHLORIDE	CONC.-mg/l	45.0	43	34	40	20	36.4
TOTAL COLIFORM	CONC.-MPN/100ml	<18	78	<18	-	< 18	<18
Fecal COLIFORM	CONC.-MPN/100ml	<18	<18	<18	—	<18	<18

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

Sheet 5 of 5

PLANT (PENN S.T.P.) GEN. WATER WORKS

							AVERAGE
DATE ON		13 Dec 70	14 Dec 70	15 Dec 70	16 Dec 70	17 Dec 70	
TIME ON		0800	0750	0730	0755		
DATE OFF		14 Dec 70	15 Dec 70	16 Dec 70	17 Dec 70	18 Dec 70	
TIME OFF		0750	0730	0755		0730	
FLOW	START	-	-	-	-	-	
	END	-	-	-	-	-	
	TOTAL	-	-	-	-	-	
	24 hr. Flow Rate	-	-	-	-	-	
INF.	TEMP. ON	26.1°C	26.1°C	26.1°C	27.0°C	26.5°C	26.1
	PH - ON *	9.5	9.8	7.24	7.2	7.18	8.3 *
EFFLUENT	TEMP. ON	25.2°C	24.4°C	25.4°C	26.5°C	24.3°C	25.2
	PH - ON *	9.7	9.8	7.04	7.2	6.75	8.1 *
	Cl. Residual	5.0	3.5 est	5.0	2.5	6.0 est	4.4
	CHLORINE-ON	-	-	-	-	-	
	CHLORINE-OFF	-	-	-	-	-	
	ON-OFF-lbs	-	-	-	-	-	

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
13 Dec 70	NORMAL	ONE PRIMARY CLARIFIER NOT BEING USED SLDG IN PLT	19 INF TRIPPED	-
14 Dec 70	NORMAL	Unused primary filled. Sldg in plant	19 inf empty 19 eff blank	GAE
15 Dec 70	NORMAL SMALL WHITE (GREASE) SPKS	PRIMARY SET USED AS SLDG THICKENER BEING PUMPED OUT. SLDG IN PLT (OVER)	#7 INF. -40 ml)	GAE
16 Dec 70	NORMAL WHITE SPECKS	NORMAL	O.K.	GAE
17 Dec 70	Normal	Normal	ok	LAW
18 Dec 70	NORMAL	NORMAL	EFF #5 - DRY	GAE
* - ~~Dr~~	Ph for first	two days may be	eroneous	

L. W. Olinger

MR. OLINGER: Report on Waterborne Wastes from City of Miami-Virginia Key Wastewater Treatment Plant.

The plant is a high rate aeration unit with effluent flowing to an ocean outfall. Primary contact was Mr. David Backmeyer, Plant Superintendent for the Virginia Key Plant.

Summary and conclusions.

The average five-day biochemical oxygen demand of the influent and effluent were 311 and 64 milligrams per liter respectively and an average of 21,640 pounds per day were discharged to the Atlantic Ocean through an ocean outfall. An average total suspended solids influent concentration of 654 milligrams per liter was found during the study and 24,450 pounds per day were discharged at a concentration of 75 milligrams per liter. The average flow during the study was 40.3 million gallons per day, which is 86 percent of the design flow.

The average chlorine residual concentration was 0.4 mg /l and the median total and fecal coliform concentrations measured prior to the ocean outfall and just after chlorination were 1300 and 78 MPN per 100 ml.

(Which said report in its entirety is as follows:)

Lower Florida Estuary Study
Report on Waterborne Wastes from
City of Miami - Virginia Key Waste Water Treatment Plant
Mailing Address
Mr. Garrett Sloan
Department of Water and Sewers
P.O. Box 316
Miami, Dade County, Fldrida
February 16, 1971

INTRODUCTION

The Virginia Key Waste Water Treatment Plant was surveyed during the period January 10 - 15, 1971. The plant is a high rate aeration unit with effluent flowing to an ocean outfall. A Serco automatic sampler was utilized to collect five 24-hour composites of the influent. Effluent samples were taken from an automatic sampler operated by the plant, after chlorination. Sample collectors were Messrs. Terry Davis and Joe Hopson. Primary contact was Mr. David Backmeyer, Plant Superintendent, Virginia Key Plant.

SUMMARY AND CONCLUSIONS

The average five-day biochemical oxygen demand (BOD_5) of the influent and effluent were 311 and 64 mg/l respectively and an average 21,640 lbs. per day were discharged to the Atlantic Ocean through an ocean outfall. An average total suspended solids (TSS) influent concentration of 654 mg/l was found during the study and 24,450 lbs. per day were discharged at a concentration of 75 mg/l. The average flow during the study was 40.3 MGD which is 6% of the design flow.

The average chlorine residual concentration was 0.4 mg/l and the median total and fecal coliform concentrations measured prior to the ocean outfall and just after chlorination were 1300 and 78 MPN per 100 ml respectively.

At the present time there are no specific performance criteria for ~~plants discharging through~~ ocean outfalls. However, Dade County has set requirements which will come into effect on January 1, 1972. These criteria require not less than 30% removal of BOD_5 and not less than 35% removal of total suspended solids. This plant affected 79.3% removal of BOD_5 and .4% removal of total suspended solids. ~~Therefore, it complies with~~ the above requirements.

The average removal efficiencies and loadings were calculated from the daily values.

INVENTORY

The plant is designed for an average flow of 47 MGD. Major components of the plant are:

1. Aerated grit chamber. Two chambers designed for a detention time of 2.61 minutes at a flow of 76.5 MGD (assuming use of both). Normally, only one chamber is in operation, and there is semi-annual rotation.

2. Aeration tanks. The four tanks are designed to maintain a detention time of 2.75 hours. These are high rate activated sludge units with step aeration. Blowers are powered by digester gas and have a total capacity of 41,000 CFM.

3. Secondary clarifiers. There are four secondary clarifiers designed for a detention time of 2.5 hours.

4. Chlorine dosing chamber. The chlorine dosing chamber is designed for a dosage rate of 10 ppm.

5. Digester system.

a) Two sludge thickening chambers (standard circular clarifiers) operating in parallel.

b) Four anerobic digesters, operating in sets of two (i.e., two-stage anerobic digestion).

6. Ocean outfall. A 90" ocean outfall about 4600 feet long which discharges through 12 outlets at a water depth of 19 - 20 feet.

DISCUSSION OF RESULTS

The average flow at the Virginia Key Waste Water Treatment Plant was 40.3 MGD and the average design flow for this plant is 47 MGD.

The average BOD_5 concentration in the influent was 311 mg/l and an average 21,640 lbs. per day are discharged to the Atlantic Ocean at a concentration of 64 mg/l. Removal efficiency ranged from 71 to 86.5% and averaged 79.3% during the study period. The average influent BOD_5 concentration was more than double the basic design concentration of 143 mg/l. In spite of this the plant still affects the design removal efficiency. The average removal efficiency of chemical oxygen demand was 77.9% and an average of 57,5 0 lbs. per day were discharged. In addition, the average total organic carbon removal efficiency and load discharged were 7 .4% and 16,720 lbs. per day respectively.

The average influent and effluent TSS concentrations were 684 and 75 mg/l respectively, and the average influent concentration was in excess of four times the basic design concentration of 160 mg/l. In this case, higher than design removal efficiencies were accomplished. The average quantity of volatile suspended solids discharged was 19,700 lbs. per day and an average of 4,750 lbs. per day of fixed solids were discharged. An average settleable solids removal efficiency of 99.1% was observed during the study.

Most of the nitrogen discharged was in the form of ammonia nitrogen at 14.1 mg/l or 4,744 lbs. per day. In addition, 1,716 lbs. per day of organic nitrogen was discharged at a concentration of 5.1 mg/l. Only 20 lbs. per day of nitrite-nitrate nitrogen was discharged at a concentration of 0.06 mg/l, but a large amount of total phosphate was discharged, 2,890 lbs. per day at a concentration of 8.6 mg/l.

The chlorine residual during this study ranged from 0 to 1.5 mg/l and averaged <0.4 mg/l. The bacterial concentrations in the effluent just after chlorination reflected the variable chlorination practices and were inversely proportional to the chlorine residual. The total coliform concentrations ranged from 79,000 to <18 MPN per 100 ml and the median concentration was 1,300 MPN per 100 ml. The median fecal coliform concentration was 78 MPN per 100 ml while the values ranged from 49,000 to <18 MPN per 100 ml.

The average chloride concentration measured in this waste was 1,043 mg/l, indicating a considerably higher than normal amount of infiltration into the sewerage system.

The daily values for all parameters evaluated during the study are presented in the attached Field and Data Summary Sheets.

DISCUSSION

General appearance of the plant is excellent. "Housekeeping" and mechanical maintenance were excellent during the study period. The appearance of the plant effluent prior to the outfall was fair. The plant is designed to affect 75% BOD_5 and suspended solids removal.

No special operating problems were encountered during the survey, and all equipment was operating routinely. The plant does have some rather unique operational problems. Some of these problems are as follows:

1. The size of the area served by the plant eliminates a diurnal variation in flow. However, there is a seasonal variation. During the dry season, and heavy tourist influx, flow is relatively low but there is a heavy BOD_5 loading. During the rainy season, flow is increased significantly, because of infiltration, and there is a drop in BOD_5 concentration.

2. The plant experiences no particular difficulty in handling of industrial wastes. There is a brewery which discharges to the sewer system, and numerous plating operations located in the Miami area also use the system. These plating operations discharge heavy metals into the system, but there is a heavy sulfide concentration in the sewage, which is due in part to the age of the influent. The sulfides apparently break the heavy metals into non-toxic compounds. Concentrations of

hydrogen-sulfide in the incoming sewage range from 150 - 200 grains. The incoming sewage appears black and septic, with a strong sulfide odor.

3. The sewer system experiences infiltration problems. An investigation of the sewer lines has indicated that the primary problem occurs in the Bay Shore area of Miami.

4. Because of the high sulfide content in the incoming sewage, an unusual amount of maintenance is required. The sulfide causes corrosion of metal compoents in operating equipment. In the past there has been a problem of heavy corrosion of copper coated screens and windows in the buildings causing unusually large replacement and extra expense in maintenance of building and grounds.

LAWRENCE W. CLINGER

ROBERT L. KING

Sheet 1 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT – GENERAL INFORMATION

DATE OF VISIT January 14, 1971
PLANT NAME: Virginia Key Waste Water Treatment Plant
PLANT OWNER: City of Miami
ADDRESS
TELEPHONE 361-5497
COLLECTION SYSTEM – TYPE: Separate
OWNER: Same as above
ADDRESS:
TELEPHONE 361-5497

DESIGN AVERAGE DESIGN FLOW: 47 MGD YEAR COMPLETE 54
STREAM FLOW cfs DURATION days FREQUENCY yrs
CONSTRUCTION COST $11.7 million
POPULATION SERVED 500,000 (calculated value based on BOD_5 and suspended solids)

OPERATION ANNUAL COST $1,298,000 for Fiscal Year 1970
PERSONNEL 91
LEVEL OF CERTIFICATION
CONDITION OF EQUIPMENT Excellent
OUTFALL TYPE Ocean SIZE 90" LENGTH 4,600 feet
DISCHARGED TO: Atlantic Ocean WATER COURSE MILEAGE:
LATITUDE LONGITUDE
TREATMENT (LIST UNITS IN ORDER, EXCLUDING SLUDGE TREATMENT & DISPOSAL)
Aerated grit chamber, aeration tanks, secondary clarifiers, chlorine dosing chamber

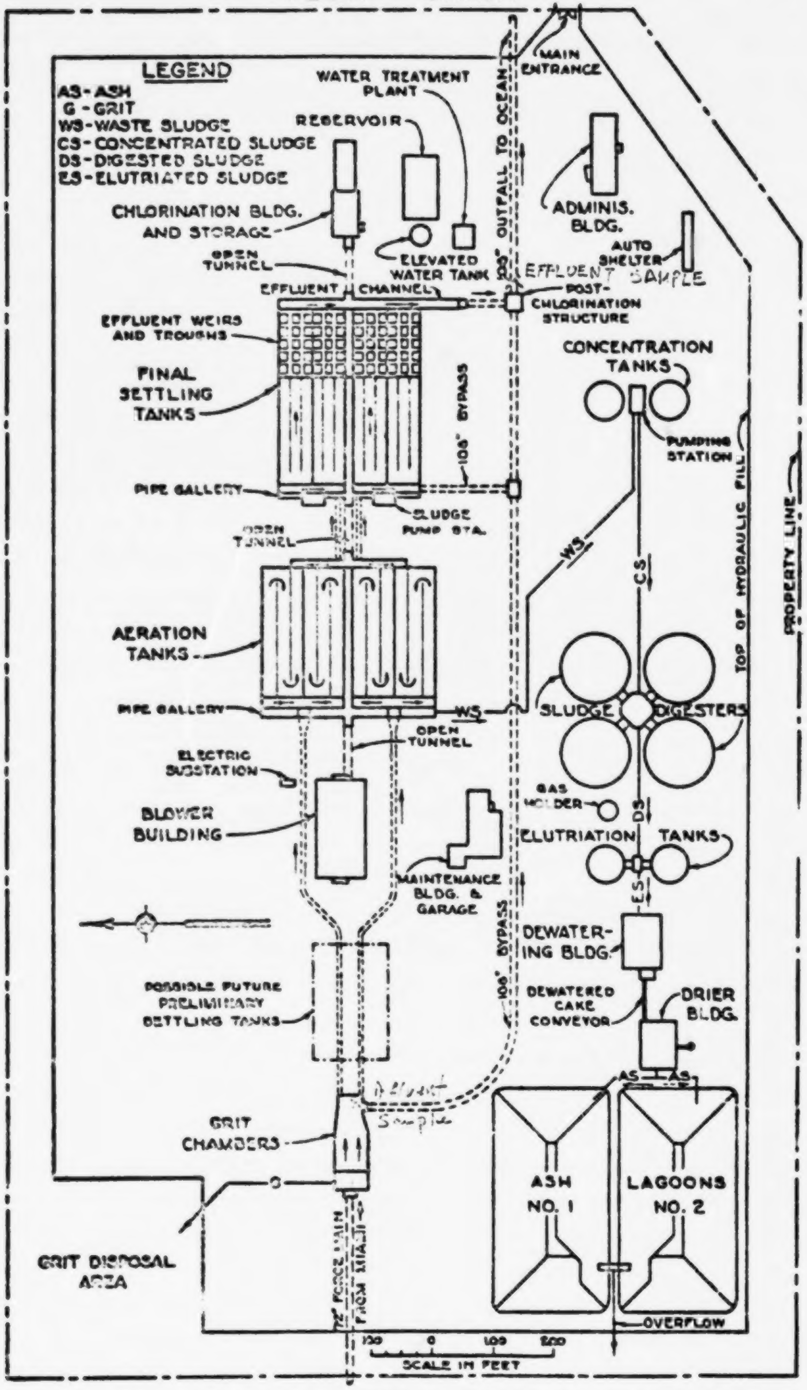
SLUDGE TREATMENT Sludge thickening chambers, anerobic digestors, sludge drying lagoons.
DISPOSAL

REMARKS

PREPARED BY: Robert L. King

2 of 5

FLOW CHART



CITY OF MIAMI SEWAGE TREATMENT PLANT

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Sheet 2 of ______

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
INFLUENT – EFFLUENT – DATA SUMMARY

PLANT City Miami - Virginia Key

DATE - OFF		1/11/71	1/12	1/13	1/14	1/15	AVERAGE
FLOW - MGD		37.5	42.0	40.5	40.0	41.6	40.3
5 DAY BOD mg/l	INFLUENT	250	325	316	253	347	311
	EFFLUENT	36	48	73	92	81	64
	IN - OUT						
	% REMOVAL	85.6	86.8	76.5	71.0	76.7	79.3
	LOAD-lbs/day	11260.	16810.	24660	27360.	28100.	21640
COD mg/l	INFLUENT	907	632	947	642	827	791
	EFFLUENT	189	134	182	191	193	172
	IN - OUT						
	% REMOVAL	79.2	78.8	80.8	71.8	79.1	[illegible]
	LOAD -lbs/day	59110.	46940.	61470.	60880.	[illegible]	[illegible]
TSS mg/l	INFLUENT	812	570	648	347	779	[illegible]
	EFFLUENT	180	33	36	60	62	75
	IN - OUT						
	% REMOVAL	77.8	94.2	94.4	82.7	92.9	[illegible]
	LOAD- lbs/day	56300.	12260.	12160.	20020.	21510.	24450
VSS mg/l	INFLUENT	764	557	629	[illegible]	[illegible]	[illegible]
	EFFLUENT	176	29	[illegible]	46	[illegible]	61
	IN - OUT						
	% REMOVAL	77.0	94.7	98.4	85.6	93.4	[illegible]
	LOAD –lbs/day	55040.	10160.	3377.	15350.	14570.	19770.
Settlable Solids ml/l	INFLUENT	15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	EFFLUENT	.1	.2	[illegible]	.1	[illegible]	.1
	IN - OUT						
	% REMOVAL	99.3	97.5	[illegible]	98.8	[illegible]	[illegible]
TOC mg/l	INFLUENT	175	215		[illegible]	[illegible]	[illegible]
	EFFLUENT	41	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	IN - OUT						
	% REMOVAL	76.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	LOAD - lbs/day	12820.	15060.	17230.	17750.	21160.	[illegible]

INFLUENT BOD POPULATION EQUIVALENT = ______

EFFLUENT BOD POPULATION EQUIVALENT = ______

LOAD = FLOW (MGD) x EFFLUENT (mg/l) x 8.34 = lbs/day

Released
From The Desk Of
Michael V. Polito

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
EFFLUENT DATA SUMMARY

Sheet 4 of 5

PLANT [illegible] Key

DATE - OFF		1/11	1/12	1/13	1/14	1/15	AVERAGE or MEDIAN*
FLOW - MGD		[illegible]	[illegible]	40.5	40.0	41.6	
KTELDAHL NITROGEN as N	CONC.-mg/l	14.4	18.5	22.0	18.6	21.3	19.0
	LOAD-lbs/day	5120.	[illegible]	6755.	6205	7390	6392
AMMONIA NITROGEN as N	CONC.-mg/l	13.2	[illegible]	13.7	13.6	13.8	14.1
	LOAD-lbs/day	4439	5404.	[illegible]	4537	4768	4744
ORGANIC NITROGEN as N	CONC.-mg/l	3.2	[illegible]	7.2	5.0	7.5	5.1
	LOAD-lbs/day	1001	76.	2432	1668.	2602.	1716
NO_2 -NO_3 as N	CONC.-mg/l	0.05	[illegible]	0.1	0.06	0.05	.06
	LOAD-lbs/day	16	14	34	20.	17.	20.
TOTAL PHOSPHORUS AS P	CONC.-mg/l	8.6	8.9	9.4	8.8	7.3	8.6
	LOAD-lbs/day	2692	2417.	3175.	2936	2533	2890
CHLORIDE	CONC.-mg/l	1038	1016	1010	1102	1081	1048
TOTAL COLIFORM	CONC.-MPN/100ml	<18	[illegible]	220	2400	[illegible]	1300
Fecal COLIFORM	CONC.-MPN/100ml	<18	[illegible]	40	490	49000	76

*Calculate Median for Total & Fecal Coliform Concentrations and Average for All Other Parameters.

Sheet 5 of 5

LOWER FLORIDA ESTUARY STUDY
DADE COUNTY WASTE SOURCE INVENTORY
TREATMENT PLANT FIELD SHEET

PLANT City of Miami

DATE ON		10 Jan 71	11 Jan 71	12 Jan 71	13 Jan 71	14 Jan 71	AVERAGE
TIME ON		0001 (1300)	0001 (1300)	0001 (1300)	0001 (1300)	0001 (1300)	☒
DATE OFF		11 Jan 71	12 Jan 71	13 Jan 71	14 Jan 71	15 Jan 71	☒
TIME OFF		0001 (1400)	0001 (1300)	0001 (1300)	0001 (1300)	0001 (1315)	☒
FLOW	START						☒
	END						☒
	TOTAL						☒
	24 hr. Flow Rate	37.50	43.00	40.50	40.00	41.16	40.3
INF.	TEMP. ON	29°	28	27.6	27.4	27.8	28.0
	PH - ON	6.8	7.0	7.0	6.5	6.5	6.6
EFFLUENT	TEMP - ON	29	28	27.5	27.8	28	28.3
	PH - ON	7.2	7.0	7.0	6.4	6.6	6.8
	Cl. Residual	1.5	<0.1	<0.1	<0.1	0	<.4
	CHLORINE-ON						
	CHLORINE-OFF						
	ON-OFF-lbs						

DATE	WASTE CHARACTERISTICS	PLANT OPERATION	AUTO. SAMPLER OPERATION	SAMPLES COLLECTED BY
11 Jan 71	Foam in effluent	Normal	OK	
12 Jan 71	" " "	"	OK.	
13 Jan 71	" "	"	OK	
14 Jan 71	" " "	"	OK	
15 Jan 71	" " "	"	OK	

MR. OLINGER: That concludes the introductions and summaries of the fourteen plants that we have already evaluated and I would like to read a little summary about those plants.

Summary of statistics on the 14 treatment plants evaluated at the present time.

The proposed State of Florida standards which require 90 percent treatment for plants are applicable to thirteen of the fourteen plants evaluated at the present time. Six plants met this requirement for five-day biochemical oxygen demand and none met the total suspended solids requirement.

The city of Miami-Virginia Key plant discharges to the Atlantic Ocean through an ocean outfall. After January 3, 1974, the State of Florida will have standards for ocean outfalls which will require not less than 90 percent removal for five-day biochemical oxygen demand. This is a statutory requirement which was enacted by the Florida Legislature last year. The Virginia Key plant does not meet this requirement at the present time.

At all plants, excluding the city of Miami-Virginia Key plant, there are a total of 49 employees. Of these employees a total of 13 are certified and at 4 of the 13 plants none of the operators are certified.

The following plants were in violation of the 90 percent treatment requirement for BOD_5:

At the Andover Wastewater Treatment Plant, Riverdale

Wastewater Treatment Plant, Carol City Wastewater Treatment Plant, Little Abner's Trailer Park Wastewater Treatment Plant, Southern Estates Wastewater Treatment Plant, Leisure City Wastewater Treatment Plant, Miami Lakes Utilities Wastewater Treatment Plant, and the City of Miami-Virginia Key Wastewater Treatment Plant.

That concludes my presentation. Thank you.

MR. WHITE: Thank you. I believe Mr. Reed has a question.

MR. REED: I think it would be exceedingly valuable for the April 1 presentation to give directly following the naming of the plant or the industry that has a treatment plant the design flow, and then the second thing should be what the flow is in reality. I would like to know which of these plants is overloaded.

You mentioned, I think, two that were overloaded. I would like to know per plant what the design flow is and what the actual flow is.

MR. OLINGER: The final--the summary report for the next conference is in preparation now. Those things are included.

MR. REED: Excellent.

MR. WHITE: Now I would like to add one clarifying point on this treatment requirement. As Mr. Patton stated a few minutes ago, a law was enacted last year which sets forth the requirement for 90 percent BOD removal in situations where you have discharge to the ocean. The conferees formally adopted this proposal at that time. It is a procedural matter, before the Federal Government can accept this it has to be sent through channels and the Administrator has to approve it, but this will be no problem, I am sure, and that these new treatment requirements will consequently be the Federal standards also for the State of Florida in the very near future.

MR. TRAINA: I just wanted to thank you and I wanted to officially thank the State and the local people for the cooperative study. I think it is one of the most extensive inventories that has ever been collected here or any place else, for that matter, and a lot of work has gone into it. I lock forward to getting the report in April on the rest of the municipalities and industries.

MR. WHITE: One last point. I believe that these reports have already been made available to the Dade County Pollution Control Officer?

MR. OLINGER: Not all of them have been made available at this time. We will make them available today.

MR. WHITE: Very good. And also I would like to see that possibly Mr. Dennis Carter gets a copy today so that he might be able to use these in the county's presentation tomorrow.

Thank you, Mr. Olinger.

MR. TRAINA: Mr. Chairman, I don't have any indication here that there are any other Federal representatives to make a statement. Are there any here? There are some Federal representatives present, but none of them have indicated they want to make a statement.

Maybe Mr. White would like to acknowledge those that are here.

MR. WHITE: I notice that we have a Mr. George Kokus with the Assistant U. S. Attorney's Office with us. Mr. Kokus is there.

And that we have Mr. Thacker Ross, Resident Engineer with the Miami Beach Office of the U. S. Corps of Engineers.

And we have Mr. A. L. McKnight, Chief of Operations, Division of the Corps Office at Jacksonville.

Mr. McKnight, I don't want to put you on the spot, but I wonder if you would be able to come forward and make a very brief statement to the conferees as to the status of the report that the conferees requested of the Corps of Engineers?

A. L. MC KNIGHT
CHIEF OF OPERATIONS
U.S. CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

MR. MC KNIGHT: Yes, sir, Mr. White. When I checked that card that I didn't want to make a presentation I hadn't heard your opening statement where you were going to mention paragraph 9 of that report, so I am happy to say a few words.

I do not have any prepared statement. As Mr. White knows, through some circumstances the contents of paragraph 9 of the report of the October 1970 meeting did not reach the Corps of Engineers in Jacksonville until after the 1st of February. Therefore, we were not in a position to have a report ready for the 1st of February.

Fortunately, however, in response to other meetings that have been chaired by Secretary of State Stone, we have delved into the problem of derelict vessels in the Miami River and we are proceeding in accordance with plans that we announced at the 21st of January meeting of Senator Stone's. We have identified 12 derelict vessels in the Miami River downstream of 36th Street. Two of them, fortunately, have already been removed since we identified them. We have reason to believe that at least three more will be removed in the very near future, for which we are very happy. The remaining group, we are continuing to endeavor to get the owners to remove them. Failing this, we will present a complete report on them to the Chief of Engineers in Washington and explore with the Chief of Engineers the possibility of removing the remaining derelict vessels at Federal expense.

We hope to be able to make a definitive statement on where we stand on that program at the next meeting of Senator Stone's group, which I believe will be in April, and if this group reconvenes again by that time we will certainly make the same report to this conference.

MR. WHITE: Thank you, Mr. McKnight. And I would like to clarify a point with respect to the official transmission of this summary.

Under the law, the conclusions and recommendations of the conferees have no legal status until they are promulgated by the Administrator or, as in this case, the then Secretary of the Interior. We were in a transition phase in our organization of EPA at the time, and apparently this summary was not approved until mid-January. However, it was, as soon as it was received in the Regional Office, forwarded to the Division Office in Atlanta and with the request that an interim report be made, and then I believe we subsequently advised you of the meeting and asked for a brief statement at the time.

MR. MC KNIGHT: Certainly I didn't imply any criticism, Mr. White. We certainly understand the circumstances. But it is just that we could not have a definitive report, which we would have liked to have had.

MR. WHITE: I appreciate that, but I just wanted to clarify the reason that this was not sent out. However, I would observe that the Corps attended the last conference. I don't know that they were here for the full three days, but had they been, then they would have known that these conclusions and recommendations were made by the conferees.

MR. MC KNIGHT: It was unfortunate that our representative was not here on the third day, I believe it was, when that was probably discussed.

MR. WHITE: Right.

MR. TRAINA: Mr. McKnight, could you give us a feel as to what kind of schedule you think you might get the remaining seven boats out, and is there anything we can do to expedite that?

MR. MC KNIGHT: I don't believe so, Mr. Traina. We are going to get our presentation to the Chief of Engineers out within a week or two and we have to wait and see their ruling on taking them out. We hope, as I said, by April to be able to say yea or nay on the subject.

MR. TRAINA: If we can give you any help, let us know.

MR. MC KNIGHT: Thank you, sir.

MR. WHITE: I believe Mr. Reed has a question.

MR. REED: I do want to urge the attendance on April 1st, or whatever the date set for the resumption of the conference.

MR. MC KNIGHT: Be sure and invite us and we will be here.

MR. REED: Fine, sir.

MR. WHITE: We hope to give you a timely invitation.

MR. MC KNIGHT: Thank you.

MR. TRAINA: If there are no other Federal people who would like to make a statement, that will conclude the Federal presentations.

MR. WHITE: Thank you, Mr. Traina.

I will now call on Mr. Reed for the State's presentation.

NATHANIEL P. REED

CHAIRMAN, FLORIDA AIR & WATER

POLLUTION BOARD, TALLAHASSEE, FLORIDA

MR. REED: Since the initiation of the conference, two significant meetings were held in Dade County. One was held under the auspices of the Greater Dade County Chamber of Commerce, which brought together the cities, the county and a large cross-section of interested and vital members of the Dade County community. A great many points were resolved that day, but one point was not resolved at that meeting and that was who in this county was going to be in charge of the overall plan. Since that meeting I believe the County Commissioners have again addressed themselves to that point and we have now, I think, definitive knowledge that the county is going to be deeply involved not only in preparation of the master plan but in the control of all of Dade County's waste sources.

Secondly, last Tuesday the City Commission of Miami Beach, under the leadership of Mayor Dermer,called a meeting of the urban core cities in that area to thoroughly discuss going to one treatment plant in cooperation with the county, and I thought that that was a major step in the right direction to take care of the problems of Miami Beach and of the central core cities. We of the State of Florida had show cause hearings against those cities, and we granted at that meeting an extension of time to allow the technical staffs of the county and the affected cities to have time to get together and to come up with a basic plan which will be submitted in the fall with an interim reporting date of July 1, 1971. The County Commission was represented, the County Manager's Office was represented and all the affected cities were represented. They have started or initiated proceedings to attempt to resolve the difficulties of rates, percentages of total costs, and division of responsibility. Perhaps we will hear more of that tomorrow.

I think these are the first steps toward the resolution of these very difficult problems that we face in this county. I would like to recognize in the room Mr. Frank Kleeman, the Southeastern Representative of the Department of Air & Water Pollution Control; Mr. Schmidt, Broward County Pollution

Control Director; from our Tallahassee Office Mr. Mauriello and Mr. Brown.

I think it is safe to say that since Mr. Ruckelshaus has come into office that unless we galvanize action in Dade County that Dade County could face the problems that have faced other cities where there has been direct Federal intervention to achieve compliance with State and Federal laws. This is to be avoided in this county and the only way to avoid it is by prompt remedial action. I am looking forward to tomorrow's session with the County Manager's Office and with the County Commissioners.

We have a small number of people from the audience who wish to be heard this morning. Would this be the appropriate time for them now?

MR. WHITE: Yes.

MR. REED: I will call upon Mr. C. L. Reynolds, Division Manager, General Waterworks.

C. L. REYNOLDS

DIVISION MANAGER, GENERAL WATERWORKS

MIAMI, FLORIDA

MR. REYNOLDS: My name is C. L. Reynolds. I am Division Manager of the General Waterworks Corporation, business office at 9555 North Kendall Drive, Miami, Florida.

Mr. White, Mr. Reed, members of the conference.

C. L. Reynolds

My purpose in being here this morning is merely to update the statement that I made to the conferees at the last meeting. At this time it will be much more brief. (Laughter.)

With respect to the Community Sewage Treatment Plant, in your analysis it was indicated to be overloaded hydraulically at the present time, although we are producing an acceptable quality of effluent with respect to BOD removal. At the time of the October conference I indicated to you that plans were in the making and that we had a contract with Dade County to tie into their interceptor system. That contract has been consummated and at the present time we are laying pipe from our treatment facility to tie into the county interceptor. At the time that that total facility is complete and ready for operation, the community plant will be phased out of service.

With respect to the Snapper Creek Park Plant, the construction of the expansion of that facility to three million gallons a day has been completed, and the Aron flowmeter which was mentioned in the report--which, incidentally, was on order at the time that the inspection was made at the plant--has been installed and has been in operation approximately one month at this time. It did confirm the average rate of flow through the plant to be somewhat less than the 2.5 that was estimated at the time. We have been averaging about 2.4--

MR. REED: I will ask the survey team to do a further inspection there, and if their report needs modification prior to April 1st, I am sure they will comply with that request.

MR. REYNOLDS: I think we all recognize that in this type of activity that there is work constantly going on and that you fix things at any given date and they may be changed even two weeks down the road. I don't say that critically at all. I just wanted to bring it to the attention of the conferees that we have taken those steps.

The work on the deep disposal well has been completed, all the monitoring equipment has been installed, the electrical work, the pumps are all in place ready for final checkout and calibration.

Following a conference yesterday with the Dade County Pollution Control Officer, he authorized us to proceed, starting tomorrow, with the checkout of this equipment and calibration of monitoring devices, which will take a period of approximately three weeks to complete and have ready for regular service.

That is all I wanted to bring to your attention. Thank you.

MR. REED: Thank you, Mr. Reynolds.

Mr. T. Brill.

MRS. SHAFMASTER: Mr. Reed, Mr. Brill isn't here. May I speak for him?

MR. REED: Yes, indeed. Will you come forward and identify yourself.

MRS. MARCIA SHAFMASTER
HIGHLAND LAKE ASSOCIATION
NORTH MIAMI BEACH, FLORIDA

MRS. SHAFMASTER: I am Marcia Shafmaster and I reside at 2330 N.E. 211 Street in Miami Beach.

As a citizen, I would like to thank you for being here, gentlemen. We are awash in our own sewage here in Dade County. Something is being done for it and we thank you for that.

For some reason, one of the lakes in Dade County remains unpolluted. That is a small lake in northeast Dade County, Highland Lake. Right now the road department proposes to put a highway through there, so that what isn't covered with sewerage will be covered with asphalt. This is State Road Job 87,000-1507, and whoever has concern with this, would you please help us out.

MR. REED: We will bring this to the attention of Mr. Milner in Tallahassee immediately, and I would be delighted to furnish you a report at the reconvening April 1st as to the effects of our inquiries of the DOT office. We will take on that responsibility.

MRS. SHAFMASTER: Thank you.

MR. PATTON: What is the road number?

MR. REED: Would you repeat the road number?

MRS. SHAFMASTER: Yes, sir, State Road Job 87,000-1507. This is generally from northeast 172d Street to I-95 in Dade County.

MR. REED: Thank you.

Jean Evoy from Tropical Audubon.

MRS. EVOY: I would like to ask, may I speak after Mr. Redford?

MR. REED: Yes.

MRS. EVOY: It would be very helpful to me. I was not prepared to speak before the county had given its presentation.

MR. REED: You may reserve time to speak tomorrow.

MRS. EVOY: I would very much appreciate that, if I could.

MR. REED: Granted.

MRS. EVOY: Thank you.

MR. REED: Does Mr. Lee wish to be heard today or tomorrow?

MR. LEE: Tomorrow.

MR. REED: Does Mr. Redford wish to be heard today or tomorrow or both? (Laughter.)

MR. REDFORD: I don't know what you are going to do between now and tomorrow. (Laughter.)

MR. TRAINA: We do have some plans.

MR. REDFORD: All right.

J. F. REDFORD, PRESIDENT

IZAAK WALTON LEAGUE

MIAMI, FLORIDA

MR. REDFORD: I would like to depart somewhat from the numbers that you are commenting on today. We have had a chance to look at the very most preliminary form of the master plan. Normally we wouldn't bring this thing up, except we think that between now and November if there isn't a hard look taken at this plan, through not entirely their fault the county and other agencies may be in a position where they will not be able to conform and we will, what is worse, have no master plan that will be workable at that time.

Now, there are several points that I will just bring up very briefly and some suggestions, and I hope that they will be accepted. I hope that there is still possibility in some cases to even add some additional recommendations to this conference, which I think are badly needed.

One, as many of you know, I think several of the conferees attended the meeting held by Secretary Stone on the Miami Airport, which was identified at that meeting, I think pretty conclusively, as the major source of pollution of the Miami River. Now, this is not only in the sewerage, which it is also, but it is in the industrial wastes, which has not been gone into too much. The statistics on this many of you have heard before, they are available in Mr. Baljet's office, and I believe Mr. Hagan and his people have done something on this too. This is a grave problem.

There are industrial wastes, such as oils and detergents, possibly cyanides, we are not sure, and various other chemicals that go along with plating, now going into both the sanitary sewerage of Virginia Key and going into the canals and thence to the Miami River. We feel that there should be some inclusion of that since there is also municipal sewage coming from somewhere in there as the accounts have shown this.

We also want to point out that in the master plan as it exists now, and I reemphasize this, in a very preliminary stage, there are very few if any big regional plants planned except possibly, and again they are in the most preliminary stage, that on the north Miami outfall. I will get to more of that a little later.

Secondly, a problem arose last week where before the Miami City Commission there was a resolution which, if passed, would have restricted effectively--and I mean effectively, since the city of Miami holds title and the water and sewer department of that city does not hold title to land--it would have restricted them to their existing fence line for expansion.

This meant that the approximate figures--and Mr. Sloan can give you more figures on this--this meant that we would have been restricted to approximately 75 million gallons a day within that fence line.

Now, if this were to go on--and the resolution was only deferred, it has not been turned down, it has only been deferred--this means that the present contracts or the present treatment of sewage of Virginia Key could only expand approximately 30 million gallons over its present and by 1980 would have reached that level as secondary treatment. And as you can understand, as we put sewer districts in in Miami, particularly, say, in the area where I live, I would venture to say, and this is just a guess, that less than 50 percent of the people in the area are hooked up and when they are hooked up, of course, this means more sewerage and you don't reach your maximum immediately. It happens over the years.

Now, for example, Mr. Sloan has computed by 1980 or 1985 he will run out of space for treatment if he is restricted to this fence line. Well, he is working on an actuarial basis of increase, not on a potential. If the law as it exists now were enforced where everybody who has a sewer had to hook up, it is conceivable, and he can tell you better about that than myself, that he would come an awful lot closer to this 75 million prior to 1980 to 1985 And in talking to Mr. Sloan, this probably, if it passed, would mean that between the areas of roughly Red Road and the Palmetto Bypass in the center section of the city no further hookups could be made or no further sewers put in without additional treatment plants somewhere.

This presents a great problem, because our big hope for immediate cleanup in Dade County, and particularly in the center city, is the Virginia Key plant. Now, I grant you that it is not Mr. Sloan's fault, it is not the county's fault, but we are the sum of our parts and Dade County has got to resolve this thing because otherwise in 1980 we will be overloaded again in Virginia Key, no plans for big western sewerage plants which are needed.

This is the thing I--

MR. REED: Mr. Redford, for my edification, what seems to be the reluctance on the Miami City Commission to extend the borders from the present Virginia Key site?

MR. REDFORD: Well, it is somewhat amusing if they weren't so fraught with trouble. One, we want to put a golf course in and the general idea is that even those who don't want to put a golf course in there, they say, well, we can't use our valuable ocean front lands for such things as sewer plants. Now, of course this does not take into consideration that one-third of the key is presently being used as a city dump, but nonetheless, I mean, what is the difference between a sewer plant or a city dump? I mean the point is the title of those lands vests in the city of Miami and the water and sewer department has to go to the city to get the land and get permission to use that land, and further than that there are even further curbs on the water and sewer department in that the budget has to be approved by the city.

Now, the city has proposed a northwestern plant on three sections of land it owns not abutting the city of Miami with deed restrictions on the land, I guess they are deed restrictions, that that land be used only for wells, and it is in an area where they have not been granted service, so it means it becomes ludicrous in a way, and, of course, if the water and sewer department didn't want to build it we are in bad shape because they do have control over that. So I say that the city of Miami must allow at least a certain amount of expansion to take us to 1980 and beyond that because it is a built-in overload after that time.

Now, secondly we come to, I think, one of the glaring omissions, although I know orally that they are interested, in that the master plan has to be submitted to you, is there are no provisions immediately for recycling, either testing or recycling in itself. For example, we had suggested in the past that there be some provision for this sort of thing, but we find no plan in there that has any talk about it. Now, I have to give credit to Commissioner Matheson for this because he and I talked about this, and he felt that a good suggestion along this line is that this rather controversial Perrine-Goulds plant, which will be finished in a month or two--and I am sure that Mr. Thoman and Mr. White remember the problems of the Perrine-Goulds plant. According to Mr. Carter, whom we talked to recently, this will initially take on about a million gallons a day. It is fairly far west. It is on a creek, which means that in case there are any accidents it could be dumped into the creek, and we feel that this is a plant which should be a pilot plant for recycling. It is built-in. There is a great deal of pressure here in Dade County to enlarge that plant. I think that if it were proved to be a good operating plant on a small basis, it could be enlarged. Certainly I think that Mr. Carter has more applications than he has capacity at the present time and there are plans to raise this to something like eight million gallons.

This is a suggestion, but in any case we feel there should be experiments with recycling of water somewhere here in Dade County, since some day we are going to have to have it and we don't want to be at the last moment not having it and needing it.

MR. REED: Mr. Redford, one of the omissions I made in introducing guests, the State geologist, Dr. Robert Vernon, is here in the back of the room and I know how anxious he is to address himself to an experimental project of this nature. He has been at the forefront in this state of discussing the very great need to recycle our water resources in South Florida and he is here. He was a member of the conference held earlier and he is part of the recommendations. I am sure Mr. Carter will address himself to this point probably tomorrow in his presentation.

MR. REDFORD: He probably will. We have talked together, and I think he agrees at some point or other along the line we are going to have to do this experimentation of recycling. Which brings us to our next point and that is this.

Oh, incidentally, I might say that also I believe there should be some assistance of Federal funds for this pilot project, and the reason I say this for the benefit, I am sure, not of the Board but the others here, this plant starts out being a tertiary treatment with nutrient removal and is ideally suited for this sort of thing.

The other thing we are coming to is this deep well injection, which, incidentally, the way that the conferees set up their recommendations is this: By 1974 they can no longer discharge at all into the county canals, and this was defined by the Park Service, and I believe some of you have a map that was made by them, if not you can get it, where they believe that there should be no further discharge. It takes it roughly from the Coral Gables Waterways south. I asked that Mr. Brown, I don't think he is here today, would mail this to the then FWQA and I hope you have it.

Well, I can get you a copy of it, then. It is roughly from the Coral Gables Waterway south they feel is their area where no additional discharges should take place after 1974, and this is to protect the Biscayne National Monument. There is a map in existence and I think I do have a copy of it.

MR. REED: All his map does is to delineate the flood control canals by name and number?

MR. REDFORD: Yes, by name and number, and I think there are also streets there, I think the trail as taken as a proportion of the boundary and the Coral Gables Waterway, which has no designation, I don't believe, according to the flood control.

The important thing about the deep well injection and the recycling, it seems to be the only two possibilities of disposal in the water of sewerage effluent in South Dade according to the recommendations made by the conferees at the last meeting. In other words, you say "no discharge," and I agree with it heartily, "into the canals of South Dade." Also, probably, I don't imagine the Park Service is going to stand still for an outfall going across the Biscayne National Monument.

So you come across and say, what are you going to do with the effluent? Well, are you going to put it in deep wells or are you going to recycle it? Well, the deep wells, of course, now, I don't know whether it is according to the plan, but the general idea with the people who are making the master plan is that all sewerage control plants in South Dade would go into deep well injection. And whereas we are not for that— I think the major reason we are not for that is because this is, again, water loss—but there are other reasons why we feel that it shouldn't go in, which have been stated by various scientists, and I am sure that the gentleman from the Geological Survey will come up with that.

Pursuant to that, as has been stated by the gentleman from the General Waterworks, Peninsula Utilities I believe by March 1st will begin to discharge into the well that they have constructed. There were provisions made for monitoring this, but as I believe, and I can be corrected on this, the monitoring was to be done by the company itself. We feel this is so important in Dade County and so many others are applying for it-- there is another application, I think Mr. Baljet can tell you more about that--we feel that this should be monitored by the Federal Government, more especially the U. S. Geological Survey, and we feel that there are doubts about this system. Our major doubt, as I have said, is why we should throw the water away at all.

MR. REED: Jim, let me just respond to that very quickly.

The art of recycling water is definitely in its infancy. The world has been troubled with other problems and have left these mundane problems behind, much to the grief of all of us who live on this earth. But I think the immediate problem is to get man's wastes out of these canals and out of these waterways. I don't look upon the deep well injection system as anything that is going to remain in effect for eons of years. I look upon it as a crash measure to get man's wastes out of canals,and as the art and the science arrive at a stage where we can reuse this water, because we will desperately need it, I expect to see those plants modified through a form of full tertiary treatment where we can safely reapply the water into the ground water system.

But I think we have to juggle here immediate gains against possible risks against long-term development on retrieving our water. But I think we would probably be mightily premature if we thought we were going to accomplish recharge to our drinking water supply by 1974-75.

MR. REDFORD: I will agree with that. My only point is also the deep well injection, although not quite so much in its infancy, certainly hasn't received its--

MR. REED: I would go along with a suggestion that we ask for outside monitoring of the deep well, as this is vital to the progress of the program and vital to the safety of the citizens of Dade County, and I am sure the conferees will take that recommendation very seriously.

MR. REDFORD: Now, in connection with that, there is a thing that I am requesting that I think is vitally needed both for outfalls and the deep injection wells. It was mentioned here previously that there was a law passed in the last legislature by now President of the Senate Jerry Thomas, and I just briefly refer to it, where it says,

"Sanitary sewage disposal treatment plants which discharge effluent through ocean outfalls or disposal wells on July 1, 1970, shall provide for secondary waste treatment and, in addition thereto, advanced waste treatment as deemed necessary and ordered by the Department of Air and Water Pollution Control by January 3, 1974."

Now, this is a power of the State and with the subtrench on State finances, even though the county is on record as wanting the State to take over its program, it may be that they won't be able to take it over for some time.

Now, this puts us in a rather strange position of our local Pollution Control Officer not being empowered by his own ordinance to do what is required of the State Pollution Control Department. In other words, what I am getting at, there are a number of instances where I believe better enforcement can be done in Dade County if our present Pollution Control Director is deputized as was the last one. I would like to request that very much because I believe there is--well, let me pass this. There is an intent here to do a very good job, there is a very good job being done, and I believe that the deputization, particularly in the fast-growing lists of laws that are coming out of Tallahassee, and I hope it gets even faster, that we must have a man who can enforce the State law too, because it takes awhile for the county to catch up with its ordinances.

MR. REED: The point is well taken, and I am sure Mr. Patton and I will discuss this with Mr. Baljet. The point is well taken.

MR. REDFORD: The last--I believe it is the last anyway--the last point I would like to make is this.

I think that instruction should be made to Dade County, there has been a slight departure from this and I don't think it is a serious one unless it does continue, and that is there should be some ruling here that as long as there is no adequate sewerage and as long as there are no sewers at all, certain types of construction should not be allowed to occur even in anticipation of such sewerage treatment coming. The building permits should be granted only if such sewerage is now available. Now, there have been some instances of permits granted here in anticipation of a sewer line going by, and I am sure it will be by in time to pick up some certain buildings, and so forth. But this is essentially bypassing the Pollution Control Officer who in this area has a moratorium in existence. I feel that there are other places in Dade County where this could occur.

And further than this, we have, and it was mentioned here before, the Miami Lakes installation, which was judged by the gentleman who made the presentation for the EPA as being inadequate. But the present idea is to hook this up to the North Miami outfall, on which there is no treatment whatsoever. Now, I don't know, but I would like to have it clarified, and if we are to take plans without having no matter how inadequate a treatment and hook them up to an outfall where there is no treatment whatsoever, it is this kind of thing--and I don't know if you people have a handle on this thing, but I do feel that this must stop. I am not asking for a general moratorium on building in Dade County; I think that would be foolish; but I think in such areas where the sewerage is inadequate that there should be no further building permits granted until such time as it is there and adequate.

I think that is about the only representations I would like to make. I would like to say that I think the county is beginning to move. Conversations yesterday, I believe it was, with Mr. Goode and Mr. Carter show the intent. I think they are to be commended. It has taken 12 years to get this far, not for them, they are relatively new; but I would like to say that I think we are getting in that direction, albeit slowly. I feel that there should be direction coming from the conferees at a more frequent interval so that when the final deadlines come they will not be thinking about your plan is no good and here it is November 1st. I think now is the time to say your plan is not proceeding in the proper direction, will you do thus and so.

Thank you. (Applause.)

MR. REED: Thank you, Mr. Redford.

Does anyone else wish to speak?

Yes, Mr. Traina would like to comment, Jim. Hold on a moment.

MR. TRAINA: Jim, let me just respond to a few of the items you mentioned with regard to the Miami Airport.

Mr. Hagan and his staff will look at that in the industrial waste part of the inventory on a high priority basis and make whatever recommendation to the County Pollution Control Officer is deemed necessary and, I might add, to the EPA is deemed necessary.

With regard to your comments on this reuse, all I could say, I would like to reiterate what Mr. Reed said. The initial conference directed itself at a two-pronged attack, the first one being to get the stuff out of the canals. I think this is what we had in mind as a high priority first item business. The reuse thing we are all concerned about. I might add that Mr. Patton has held a meeting that we attended here in the past month to begin looking at this with a number of interested agencies involved. We have one of our senior people, Mr. Wakefield, who is going to be looking at this with the local people, and I just wanted to say that the main concern and the main item right now is to get the stuff out of the canals and this is what we have to shoot for.

MR. REED: Mr. Carter.

MR. CARTER: My name is Dennis Carter, Special Assistant to the County Manager.

Mr. Chairman, members of the conference.

I am not here to make a presentation because the county is making that tomorrow, but we do have some information which we have gathered for you that we would like to discuss with you tomorrow. I would like to take this opportunity at the conclusion of this meeting, if you are concluding it, to pass out this material so you have the benefit of today and this evening to go over it and discuss it tomorrow.

MR. REED: Excellent. We are all night workers, so we will be delighted to have it.

And for my edification, the time and place tomorrow is where?

MR. CARTER: 9:30 a.m. in the Board of County Commissioners Chambers. That is on the second floor of the Dade County Courthouse.

MR. REED: Fine, sir. All right, we will accept that material now.

And again I will renew my invitation, does anybody else wish to speak at this time? You will be allowed opportunity tomorrow as well.

Yes, sir, if you will come forward. Will you identify yourself?

OLAF PEARSON

CITY MANAGER

HOMESTEAD, FLORIDA

MR. PEARSON: Olaf Pearson, City Manager, City of Homestead.

MR. REED: Yes, sir.

MR. PEARSON: I am assuming we are one of the plants that have been reviewed, although I didn't hear the report. I assume that will be later.

The problem in Homestead is simply that we are ready to go, but we don't know where. You have said take the material out of the canal, but you don't tell us where to put it. If you want to try recycling or deep well, fine, Homestead is willing to go along.

We have applications in with the Federal Government--

MR. REED: Excuse me, sir.

Could I have a little more quiet in the room? Because I am very interested in this presentation. Thank you.

MR. PEARSON: We have applications in with the Federal Government and expect to join with our neighboring city, Florida City, who has no sewage treatment facility whatsoever, for expansion of our plant and collector system. But you are telling us we can't--

MR. REED: Is this with EPA or with HUD?

MR. PEARSON: With HUD.

MR. REED: All right.

MR. PEARSON: You are telling us that we can't put it into the canal system after 1973, and yet you are giving us no standard as to how we can treat it now, and we have to go now.

About one-third of our city is treated. Our plant probably very shortly if not already overloaded will be. We have to expand the collector system to meet the conditions of the elimination of septic tanks, but we have no standards.

My engineers tell me, and I believe there are probably other engineers in the audience who will question, what is tertiary treatment. Not being an engineer I don't know. Somebody says it is a third stage. A third stage of what? That definition hasn't been made.

If we are going into a deep well system, how deep do we have to go?

MR. REED: Have your engineers, sir, been to the Tallahassee Office of the Department of Air & Water Pollution Control concerning their permit request?

MR. PEARSON: I cannot say.

MR. REED: Well, if they had, sir, a lot of these questions would have been answered. And I would suggest to them that they make the one hour's flight from Miami to Tallahassee, which is the seat of government, where they can have these answers clarified on the spot.

MR. PEARSON: Well, fine. If we clarify tertiary treatment and we build a plant--

MR. REED: That will be clarified.

MR PEARSON: --and we build a plant now going into Canal C-103 and in 1973 we have to flood out of the canal, apparently--

MR. REED: You would not be permitted, sir, to go into Canal 103 and you would not get a valid permit from the

State of Florida for that discharge.

MR. PEARSON: Well, then, where--

MR. REED: You have to have a permit from our department for any of your discharges.

MR. PEARSON: I understand that, so this is the nut of the problems.

MR. REED: If you will direct your engineers to post-haste make an appointment in Tallahassee, the permit section would be delighted to discuss the entire range of the conferees' recommendations and, in fact, State standards with them at that time.

MR. PEARSON: And the State standards will be the standards of the Federal Government within the application, is that correct?

MR. REED: That is correct.

MR. PEARSON: All right, we will do that and we only hope we know where to go, that is all.

MR. REED: I will give you the telephone number.

Dr. Robert Vernon, State Geologist for the Department of Natural Resources, has asked to make a statement at this time because he is due in Lakeland tomorrow.

Dr. R. O. Vernon

DR. ROBERT O. VERNON, STATE GEOLOGIST

DEPARTMENT OF NATURAL RESOURCES - BUREAU OF GEOLOGY

TALLAHASSEE, FLORIDA

DR. VERNON: I would just like to clear up some questions that have arisen in some of the remarks that we never proposed the use of these zones of caverns as a final solution to the problem of waste treated feasibility disposal, but it is actually as a move to try to look at this storage of water and never intended at any time not to continue to monitor that. We have obtained from the U. S. Geological Survey a grant that permits us, with the USGS already in that, to come down into this area, where we have gotten the full cooperation of the existing operators in this injection system, to try to monitor these by any well and perhaps in over a three-year period to instruct one or two wells that we could use. I think this area is in very fine shape insofar as water resources are for the future. We have got the Biscayne aquifer; we have got the possible use of the Floridan aquifer with desalinization; we can use some of those wells as injection points along the ridges, the shorelines, to keep the salt water out. This should be done anyway, actually. We ought to drive back some of the salt water that is presently moving along the canals and in the Miami River if possible, this becomes feasible from the navigation standpoint, and then inject some of this artesian water and perhaps even some of this treated wastewater along the mounds that are present there as Coquina mounds along the coast and hold there as dams behind which **freshwater** can accumulate. There is enough water in the Biscayne if we do it this way to permit uses through droughts of two to three years periods of time and then the first rain after that of any size will fill the aquifer to its full extent. It is a very permeable aquifer. Along this ridge we are not taking probably 30 inches of water out or less, but we can probably increase this up to 40 or 45 with a little planning.

MR. REED: Very good, Dr. Vernon.

All right, again, is there anybody else in the room who wishes to speak?

Mr. Patton.

VINCE PATTON, EXECUTIVE SECRETARY

FLORIDA DEPARTMENT OF AIR & WATER POLLUTION CONTROL

TALLAHASSEE, FLORIDA

MR. PATTON: There seems to be considerable concern **about** the recommendation in Conclusion 11, the last one in the report, water conservation and reuse.

As one of the three persons named by the Governor to participate as a State representative, we succeeded in having the first meeting in West Palm Beach on the afternoon of January 20, 1971. There were, as I recall, about 16 to 18 people from various local and State as well as Federal agencies present at this time. As Mr. Traina said a moment ago, Mr. Wakefield, who has considerable experience with the State of Florida and with the Federal Government, has been named as the coordinator of this committee.

I think the group that afternoon succeeded in outlining some of the questions that need to be considered by those persons concerned before we say, yes, we have a solution and answer to your problem what do we do. Let me just give you some broad outlines of the form these questions took.

Should we consider attempting to store more water in the conservation areas?

What effect will this have pro and con?

Should we attempt to store more water in Lake Okeechobee? What are the pros and cons of this position? It might get to the position, for example, that the levees around the lake could be raised so that the inflow from the Kissimmee River would be pumped over the levees and into the lake.

Do we store excess freshwater underground? If so, where? How do we do this?

What values do we need for sewage that is to be treated and stored, either in surface areas or underground?

There are many other questions that are related here—the recoverability, the effect on the underground aquifers, the effect on the surface waters. So I think that the purpose of this group of people that will be concerned with this and will be working on it in the months ahead will be to attempt to provide some of these answers.

I think the ultimate goal as far as recycling is when you can take the effluent from your treatment plant after it has been treated and return it to the head of your water treatment plant. I am not so sure that many of us are quite ready to accept this from an aesthetic or a psychological standpoint yet, but I think this is the ultimate.

Let me point out one other point here that I think is often overlooked. There are times, as pointed out that afternoon, when the flood control district is desperately pumping for all they are worth trying to get rid of the excess rainfall that Mother Nature does give us at times and poses a real problem. I think if some of you will think back, it hasn't been very long ago that there were many complaints because the deer were being drowned in the conservation area; the water levels were too high. We can foresee four hundred, five hundred million gallons of treated sewage that could be considered.

Now, at a time such as that I just mentioned when Mother Nature is too bountiful with rainfall, do we want to put an extra four hundred or five hundred million gallons of water that has been treated back into one of these areas and add to the already existing problem? I think you will agree the answer is no. The answer is to not go on the averages. Averages are not the thing that bother you, it is peaks.

So I think the challenge here is to find out what can we do to alleviate the low periods, the drought periods. I think Dr. Vernon's remarks he just made a moment ago indicated that perhaps there are some other actions there that need to be taken. These are being done right now in California. They mined water there until it got so bad that the ground sank; the ground level subsided over 40 feet in some cases. They are now treating sewage and injecting it in a line of wells to prevent any further collapse of the ground surface and further intrusion of salt water.

So I think the best way that I can sum up the action that is now under way on this recommendation and conclusion is saying that there are a lot of people who are deeply concerned about this part of Florida and who have some considerable expertise of the problems that are going to be taking a hard look at it.

MR. REED: All right.

Mr. White, I return the meeting to you.

MR. WHITE: Thank you, Mr. Reed.

Well, this concludes the session for today. And as I indicated previously, to accommodate the County Commissioners who made the request after this meeting date had been established, we have agreed to reconvene tomorrow morning at the Dade County Courthouse to explore in depth many of these problems which were brought up today.

I apologize to each and every one of you if this inconveniences you, but we felt that it would be best that we get this presentation from the County Commission.

And with that, we will recess the session until tomorrow.

(ADJOURNMENT)

MORNING SESSION

FRIDAY, FEBRUARY ~~12~~ 14, 1971

MR. WHITE: The conference is back in session.

This is a continuation of the second session of the Dade County Enforcement Conference. The conference was convened yesterday morning at 9:30 in the Dade County Health Auditorium. Because of a conflict of dates with a hearing by the County Commission, the conferees agreed to recess and reconvene this morning to hear the County's presentation.

The presentation yesterday consisted of a brief update of the status of the inventory being conducted by the Water Quality Administration of the Environmental Protection Agency and also consisted of a very short statement by the Corps of Engineers concerning their efforts to clean up the hulks in the Miami River, and the outcome of this was that a full report will be made at a reconvened session in April.

We had a few presentations by individuals, but most elected to hold over until today when we have this full session with the county.

The first session of the conference was called on the basis of a written request from former Governor Claude E. Kirk, Jr., dated July 21,1970, to the then Secretary of the Interior, Walter Hickel. The conference was called and it was convened October 20 through the 22d in Miami.

As was announced yesterday, the participants in the conference are the Environmental Protection Agency and the Florida Department of Air & Water Pollution Control. The conferees are Mr. Nat Reed and his designee, Mr. Vince Patton, the Executive Secretary of the Department. Mr. Paul Traina is the Federal conferee. My name is John White. I have been designated Chairman by Mr. Ruckelshaus.

The conference was called as a result of the request and pursuant to the provisions in Section 10 of the Federal Water Pollution Control Act. Very briefly, I will give you the procecures that we follow at the conference.

We are keeping a verbatim transcript of the record. Mrs. Virginia Rankin is doing this. We expect to get a transcript out to anyone who would like to receive it within the next three to four months. Should you wish any part of the record before that time, I suggest that you make arrangements with Mrs. Rankin.

In a few minutes I will ask Mr. Reed to call any person who has indicated that he would like to make a statement, and I would like to ask that each person come forward to one of the two lecterns here, identify himself for the record and proceed with the statement.

The conferees are seated here at the table. In order to have an orderly procedure, questions and comments are not permitted from the floor, but we will be happy to accommodate everyone who wishes to make a statement. If you will abide by these procedures, we will appreciate it very much.

With that, I would like to call on Mr. Nat Reed for a continuation of the State's presentation.

MR. REED: Mr. Chairman, it is my understanding at this time the county wishes to make its presentation to the conferees.

And with that I invite the County Manager's Office, Mr. Ray Goode, County Manager, to proceed.

R. RAY GOODE

COUNTY MANAGER

DADE COUNTY, FLORIDA

MR. GOODE: Mr. Chairman and conferees, members of our County Commission and Water and Sewer Authority and other guests.

I would like to make a presentation, which I will try to keep as brief as possible, on behalf of the metropolitan government of Dade County. And then to let you know that we have most of our County Commissioners here who, including the Mayor, should all be identified. I think maybe I should do that first.

Mayor Clark is here; Commissioner Matheson next to him; Commissioner Shepard. In front of them, Commissioner Harold Greene; Commissioner Goldberg; Commissioner Reiseman.

Have I missed anyone? Commissioner Dansyear is here. Commissioner Gordon, I think, will be here.

My name is Ray Goode, the Dade County Manager.

MR. REED: Your most handsome County Commissioner is here also.

MR. GOODE: Yes. Harvey, right.

I would like to relate to some of the provisions of the conclusions and recommendations of the Federal-State Conferees Dade County Enforcement Conference that was held here in Miami on October 20-22, 1970, and pursuant to the provisions of specifically Section 7 of those recommendations this Board of County Commissioners approved an Action Plan for Pollution Abatement in Metropolitan Dade County. This was submitted to the conferees on January 28 this year and delineates the actions taken and those to be taken by Dade County, with these specific objectives in mind:

First, to demonstrate Dade County's awareness of the pollution problem that presently exists in this community.

Second, to demonstrate procedures and to outline a plan of study and action toward the development of an effective pollution abatement program.

And third, to show Dade County's commitment in compliance with the findings of the Federal-State Conferees Dade County Enforcement Conference previously held here.

I would like at this time to submit for the record the Action Plan that has been submitted to the County Commission and approved by this Board.Inasmuch as I am sure that you all have had some time to study this plan, I will not read it into the official record in its entirety, but for the benefit of those who may not have read it completely or are not familiar with all its provisions I would like to summarize--

MR. WHITE: Mr. Goode, if I may.

MR. GOODE: Yes.

MR. WHITE: I would like to acknowledge receipt of the report, and without objection it will be entered into the record as if read in its entirety.

MR. GOODE: Thank you, Mr. Chairman.

(Which said Action Plan follows:)

AN
ACTION PLAN
FOR
POLLUTION ABATEMENT
IN
METROPOLITAN DADE COUNTY

A Joint Report
Prepared For The
BOARD OF COUNTY COMMISSIONERS
January 15, 1971
By
Staff Members of Various County Departments
In Collaboration With
GREELEY AND HANSEN - CONNELL ASSOCIATES, INC.
Consulting Engineers
Chicago, Illinois   Miami, Florida

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APPENDIX

1. Copy of "Conclusions and Recommendations of the Federal State conferees of the Dade County Enforcement Conference, October 22, 1970.
2. Critical Path Network for Master Plans for Water and Sanitary Sewerage, Including Pollution Abatement Program.

I. SCOPE AND OBJECTIVES

A. Introduction and Authorization

On October 20 and 21, 1970, a conference of Federal and State representatives was convened "to seek ways of curbing pollution of the waters of Dade County, Florida". One of the "Conclusions and Recommendations" of this conference stated that "It is expected that the Metropolitan Dade County Commission will be prepared to present their action program ..." to a Conferees meeting not later than February 1, 1971.

This report is a cooperative effort of the County's Engineers, Greeley and Hansen-Connell Associates, Inc., and members of the County staff, to define the County's plan of action. The report is submitted pursuant to authorization by the County Commission of Metropolitan Dade County in accordance with the terms of an agreement dated November 17, 1970. This agreement was executed by the County Manager as authorized in Resolution R-1390-70 adopted November 17, 1970.

B. Ojectives

The purpose of this action plan is to delineate the actions taken, and to be taken, by the County toward the implementation of a comprehensive pollution abatement program in Dade County. The specific objectives are:

1. To demonstrate Dade County's awareness of the pollution problems that presently exist.

2. To delineate procedures and outline a plan of study toward the development of an effective pollution abatement program.

3. To show Dade County's commitment in compliance with the findings of the Federal-State Conferees Dade County Enforcement Conference. (A copy of Conclusions and Recommendations is appended).

C. Participation by Others, Coordination

To insure that the action plan for county-wide pollution abatement program is comprehensive and all inclusive, the County Manager has instructed various County departments to participate in the development of this plan. Principal sources and nature of basic input furnished by Dade County are:

1. County Manager

a. Discourse on policy matters and establishment of overall criteria.

b. Coordination and review.

2. Planning Department

a. Population data and demographic analysis of population shifts and trends.

b. Base maps.

3. Public Works Department

a. Data on sewerage systems of county, municipal and private ownership.

b. Coordination and review.

4. Pollution Control Department

a. Inventory and operational data of pollution sources.

b. Enforcement procedures, practices, and recommendations.

5. Building and Zoning Department

    a. Past and current practices, permit requirements and zoning.

    b. Detailed information on building permit moratoria restrictions.

6. Law Department (County Attorney)

    a. Review of existing laws.

    b. Recommendations as to proposed legislation.

7. Public Health Department

    a. Public Health effects of pollution and review.

2. THE PROBLEM

Dade County Florida is one of the fastest growing metropolitan areas in the United States. Preliminary 1970 census data show that population increased from 935,000 to 1,259,000 during the Sixties. Along with the population growth came the associated urban problems such as traffic, housing and pollution. Adverse quality impact on the County's fresh water and contiguous ocean water is either existing or imminent.

It is estimated that somewhat more than 55 percent of the homes in Dade County rely on septic tanks for sewage disposal. A small, but significant, percentage of the homes in the County also rely upon individual wells for potable water supply. Many of the sewage disposal facilities that serve the sewered portions of the County flow to small neighborhood treatment plants originally installed by developers to meet Federal housing rules of the 1950's and 60's. Most are discharging insufficiently treated effluent to inland waters. The threat of contamination of drinking water by sewage is accented by the fact that all of the County is underlain with a highly permeable strata of limestone collectively identified as the Biscayne formation, which is the water supply aquifer for the entire County.

Dade County has existing Master Plans for water supply and sanitary sewerage which have served as the County's guides, and have been partially updated from time to time; but they have not been reviewed or re-evaluated on a comprehensive County-wide basis since their completion in 1961.

Sewage disposal facilities for several large portions of the County have been designed and constructed, generally in accordance with the 1961 Plan, though there have been some departures, pursuant to updating of segments of the 1961 Plan. Until recently, financing limitations have hindered implementation of these plans and left resolution of water and sewerage problems to a number of public bodies and utility companies, largely on a local basis.

Existing sewage disposal plans are substantially affected by current extreme emphasis on preservation of the existing ecological systems in the Everglades, in the recently established Biscayne Monument in lower Biscayne Bay, and by the increasingly rigid standards imposed by State and Federal agencies. Consideration is also warranted to water conservation needs arising from a frequently discussed, but incompletely documented, allegation that the hydrologic system in southern Florida cannot meet the future needs of urban areas in Dade, Broward and Palm Beach counties while at the same time meeting fully the desired demands of the Everglades Park and agricultural demands.

3. PRESENT COUNTY ACTIONS AND COMMITMENTS

A. General

From the completion of the master plans for comprehensive water supply and sanitary sewage systems in 1961 until 1966, very little coordinated action was taken by the County. In 1966 the Mayor and Board of County Commissioners recognized the need for a meaningful program to provide area wide water and sewerage service and decided that this could best be accomplished through the medium of public ownership of all water and sewerage facilities, in order that the hodge-podge of local subdivision systems could be coherently planned and managed and the public health and welfare by adequately protected.

As a first step in this direction, the position of Special Assistant to the County Manager was created to coordinate and develop a County water supply and sewage disposal program. The Commission also adopted, by appropriate action, the following public policies:

1. That the County assume responsibility for installation, ownership and operation of the necessary water and sewer facilities in the then unserved areas of the unincorporated parts of Dade County, but that each municipality assume the same responsibility within their boundaries or request the County to assume that responsibility.

2. That the County acquire, by negotiation or condemnation, all private water and sewer utilities within Dade County as rapidly as possible and merge these operations with its own on an overall, integrated operational basis.
3. That the County work cooperatively with the municipalities in Dade County and with the existing municipally owned water and sewage utilities to accomplish the goal of total public ownership and eventual integration into one coordinated, publicly owned system.

B. Disposal Facilities

Various actions have been taken by municipalities and the County in recent years which generally implement the intent of major portions of the 1961 master plan. These include:

1. The connection of the Coral Gables Sewerage system to the City of Miami's Virginia Key Treatment Plant. This action allowed the abandonment of the Coral Gables treatment facility and eliminated this substantial waste discharge (2.5 MGD) from the inland waterway. Also, force mains were extended to serve South Miami. (This former treatment plant, closed in 1967, was incorrectly identified in the FWQA Pollution report "Pollution of the Waters of Dade County, Florida," 1970, description of pollution sources in 1969 and 1970).
2. The construction of the North Miami outfall. This action removed the discharge of approximately 6 MGD of highly saline treated waste from the inland canal system and

subsequently has provided an outlet for an additional 11.5 MGD (ultimately 26 MGD) of sewage from the County's recently completed North Dade Sewage Transmission System serving Opa Locka, Hialeah, Myrtle Grove, Opa Locka Airport, Carol City, Miami Lakes and the Sunny Isles Motel Row. This eliminates eight treatment facilities which posed pollution hazards to inland waters and provide an outlet for new collection facilities which replace septic tank installations. Minor extensions of these facilities will eliminate two other plants, the Andover and Riverdale Plants.

3. The development of the County's West Dade System. Presently under construction, this system will provide an outlet, through the City of Miami facilities, for 3000 acres of septic tank area in the cities of Miami and West Miami, and for three privately owned treatment plants in the unincorporated area (total flow in excess of 6.0 MGD). This system will ultimately provide an outlet for 20,000 acres in West Dade County and the town of Sweetwater. Construction and financing schedules, already well advanced, assure substantial completion of this system by late 1972.

4. An acquisition program of private water and sewerage utilities by which the County will integrate private utilities into an overall system. This program involves some seventeen private utility companies providing sewer service to approximately 130,000 people with/in Metropolitan Dade County. Condemnation proceedings have been filed by the County for the six water

and sewerage utilities operated in Dade County by the General Waterworks Corporation. These utilities serve over half of the customers now served by privately-owned systems in the County. In addition, utility valuation studies looking toward acquisition of eight operating systems have been made by the County. Negotiations for Westwood Lakes, Inc. are expected to be completed early in 1971.

(The foregoing excludes any comment on studies of the several utility operating companies now in court in an eminent domain proceeding which at this time are classed as Attorney's work in progress and, therefore, privileged and not available for reporting except item by item by the County's Attorney order).

C. Updating of 1961 Master Plan

The County has contracted with its Consulting Engineers, who developed the original master sewerage plan, to coordinate updating both the water and sewerage master plans in collaboration with the County Manager's office, County's Water and Sewer Authority, its Departments of Planning, Public Works, and Pollution Control and the appropriate State and Federal authorities. The updating of the sewerage plan will recognize the system components which have been built to date, or are planned for early construction, and will include the development of plans for necessary additional facilities. The updated master plan will also recognize increased treatment requirements such as the present State legislative fiat requiring secondary treatment for ocean discharges and will propose state-of-the-art options to comply with the Federal Conferees proposal to eliminate discharges to inland waters and lower Biscayne Bay. Further, the studies will evaluate alternatives for water reuse, for systems management of water and sewerage facilities, and for financing of the proposed program.

The Master Plan studies and report will also include the following:

1. Population analysis and distribution - current and estimated future.
2. Economic and industrial growth - present and estimated future.
3. Land use - present and estimated future.
4. Receiving waters - use, quality, etc.
5. Present waste sources and characteristics.
6. Existing facilities - description and evaluation.
7. Evaluation of problems.
8. Cost data.
9. Development of alternative pollution abatement and/or water quality enhancement programs, including systems analyses of disposal facilities, for the urban populated areas of North, Central and South Dade County.
10. Identification of need for supplemental programs to achieve pollution control objectives, such as zoning, building control, law enforcement, population density limitations, etc.
11. Development of water supply facilities including supply sources, reallocation of water use priorities, induced recharge, etc.
12. Presentation of a recommended plan for the coordinated development of water supply and waste water disposal.

13. Development of a management plan for the systems including coordination and/or integration of existing systems.
14. Development of a financing plan including capital and operating requirements, rate schedules, revenues, financing forms.

The time-table for preparation of the revised and updated Master Plan is as follows:

By November 1, 1971 - Preparation of an "interim" plan including identification of immediately needed improvements, in order of priority, for the abatement of water pollution, compliance with water quality standards, and recommendations of Federal-State enforcement conferences. The interim plan will include a five year construction and financing program.

By November 1, 1972 - Preparation of a complete plan and program for sewage disposal and water supply for anticipated needs through the year 2000.

Further details of contributing participants and coordination of input required are illustrated by the "Preliminary Critical Path Network for Master Plans for Water and Sanitary Sewerage, including Metropolitan Pollution Abatement Program" a print of which is appended hereto.

D. Recent Special Funding

In December 1970, the County was successful in marketing $50,000,000 Capital Improvement Revenue Bonds, supported by cigarette tax and other non-tax revenues. Of these proceeds $32,500,000 is allocated for the acquisition of existing water and sewer facilities, for the upgrading of water and sewer facilities owned by Dade County, and for the construction and development of new water and sewer projects throughout Dade County.

Priority schedules are now being completed for allocation of the portion of these funds to be reserved for pollution control facilities.

E. Impact of Federal and State Matching Funds

If appropriations are forthcoming to implement State and Federal pollution abatement policy and programs, the local funding already provided could generate additional matching funds of almost $100,000,000, which will greatly accelerate progress toward the stated goal, i.e. construction of sewage treatment and disposal facilities.

The above estimate contains no allowance for the funds necessary to construct local sewage collection systems, which will be eligible for substantive federal assistance, supplementing local funding through special taxing or assessment districts.

4. DISCUSSION OF CONFEREES CONCLUSIONS AND RECOMMENDATIONS

A. Waste Discharges to Inland Waters

Dade County geology creates several unique hydrological features. The major waterways, aside from the Miami River, are canals which connect the Everglades and Conservation Areas 3A and 3B in the western part of the County with the urban and agricultural areas located on and behind the coastal ridge adjacent to Biscayne Bay. There is an interchange of water through highly permeable soils and limerock strata between canals and the shallow Biscayne aquifer from which all potable water is drawn.

As defined under Sections 28-5.21 and 28-5.09 of the Rules of the Florida Air and Water Pollution Control Commission, all surface waters of Dade County upstream of salinity controls are classified as Class III - (Recreation Propagation and Management of Fish and Wildlife). The Miami River is Class V (Navigation, Utility and Industrial use), as are the waters downstream of the dams.

Of the 26 treatment plants which discharged to inland canals in 1961, only 13 continue to do so. However, during the decade of expansion and growth, other plants have been built so that at the end of 1970, 44 plants in all, discharge to inland canals. Projects already underway will permit retirement of 9 of the largest of these, removing from the inland waters total flow of 16.8 MGD. At that point, discharge of treated sewage to inland canals will be in the order of about 13.1 MGD, or less than 10% of all system flows in the County.

SUMMARY OF PLANT CAPACITIES

	As of 1961		Present	
Discharge	No. Plants	Capacity, MGD	No. Plants	Capacity, MGD
To Ground Water	6	0.68	30	1.55
To Canals	26	23.8	44	29.9
Removal Planned			(-) 9**	(-) 16.8**
After Removal			35**	13.1**
To Ocean	2*	87.0	8*	122.5
Other	9	1.32	7	1.08
Totals	43	112.8	89	155.03

* Includes Miami Beach Outfall at 22 MGD actual flow, but with capacity of 40 MGD, without treatment. Enforcement action is pending.

** Not included in totals.

Paragraph 5 of the Conclusions and Recommendations of the Conference stated that cessation of all waste discharges into the inland canal system shall be accomplished as rapidly as possible but not later than January 1, 1973. The County intends to comply as rapidly as possible.

In order to accomplish the intent of the Conferees, in this regard, the pollution abatement plan must define modification of those plants continuing to discharge to the inland waters. The alternatives appear to include discharge to the Ocean, to a disposal well, to the conservation areas of the Central and Southern Florida Flood Control District, or to the Everglades National Park. Even though the published official policy of the Federal Water Quality Administration is opposed to the disposal of wastes by subsurface injection, it is possible that the relatively high expense of pumping plant effluent long distances to an ocean-discharging system will force further consideration of subsurface injection for plant effluent, unless effluent can be discharged to the Everglades or the conservation area.

It is apparent that research should be devoted to ascertain, factually, the impact of reclaimed waste water on the ecology of the Everglades and the conservation area, to determine the relative merits and demerits of discharge to these areas.

In any event, the interim plan for pollution abatement must be completed in November 1971, and there will not be sufficient time thereafter to effectively plan and construct facilities for the total elimination of discharge to inland canals by January 1, 1973, in compliance with the Conferee's statement. This objective will be assigned the highest priority and will be completed as soon as practicable, subject only to limitations imposed by fund availability, available construction capability, and to an appreciable extent by availability of State and Federal assistance.

Meanwhile, such plants continuing to discharge to inland waters will be required, through close regulation, enforcement and inspection, to produce effluents in strict conformance with present State and local regulations, until their effluent can be diverted from the inland waters.

Until the master plan for pollution abatement is completed and accepted, permits will not be issued for any new sewage treatment plants which would discharge directly into inland waters.

A comprehensive comparative analysis of the various available types, methods, and costs of disposal of waste will be covered in the Master Plan. This will include, but not be limited to, ocean outfall, tertiary treatment, complete water reuse, deep well disposal, and direct recharge to the Biscayne Aquifer. Consideration will be given to health and welfare, protection of our natural ecological systems, water conservation, and overall water resources management. (Enumeration of an option at this point should not be construed as advocacy or to imply a preconception of suitability).

B. Secondary Treatment Requirements for Plants Discharging to Ocean Outfalls

The degree of treatment required for wastewater discharged to the ocean has recently been increased by the Legislators of the State of Florida, in General Law 80-72. This new water quality standard adopted by the State's Air and Water Pollution Control Department pursuant thereto calls for minimum of secondary treatment (at least 90% BOD removal and year-round chlorination of effluent). Paragraph 6 of the "Conclusions, etc." restates this requirement. This requirement is stipulated by law to become effective as rapidly as possible but not later than January 1, 1974. The County will comply, and an ordinance to amend Dade County Code for compliance with new statutes will shortly be introduced.

C. Control of Additional Pollution Sources Through Building Permits

The Conferees of the Enforcement Conference in Paragraph 7 of their Conclusions and Recommendations stated that:

> "All new construction shall be connected to adequate sewage collection and treatment systems. The Conferees will meet not later than February 1, 1971, to consider the question of Dade County's building permit program with the view toward controlling additional pollution sources while the Dade County pollution abatement program is under design and construction".

It is felt that the County is meeting this objective in a satisfactory manner at the present time insofar as it applies to the urban environment, with regulations and policies now in effect.

As of January 1, 1971, construction permits are withheld due to inadequate treatment and or overloaded systems, in the following subdivisions or utility service areas:

- Palm Springs North
- Westwood Lakes
- Carol City Utilities
- Seaboard (RR) Industrial Park
- Key Biscayne
- Community Utilities
- Country Club of Miami
- Cutler Ridge Utilities
- Andover Estates

Building is restricted to a lesser extent, as of January 1, 1971, in the following subdivisions or utility service areas:

- Snapper Creek Utilities
- Riverdale
- Southern Estates
- South Miami Heights
- Golden Isles
- Myrtle Grove Utilities
- Leisure City

Within the last month, the Building and Zoning Department withheld at least 200 building permits in the various sewage treatment districts due to such moratoria being involved. For example, in the Carol City utility service area wherein only 30% of the platted lots have been developed since the subdivision was established, at least 140 construction permits were held up pending a more satisfactory operation of sewage disposal facilities. In Palm Springs North and in the Florida Water and Utilities Service area where the demand for new housing is high, permits have been held up pending release by the Pollution Control Department. For the same period, 371 single family residential permits were issued for the unincorporated area. The 200 permits withheld represent 60% of the total number issued for December 1970 and indicates the heavy demand for housing in areas where sewage facilities are inadequate.

While the above statistics are not kept on a regular basis, the examples cited above do point out the impact to the community of withholding construction approval until adequate and proper sewage treatment is provided. This is being done in spite of the critical need and demand for more housing.

Present regulations assure the orderly and timely expansion of these sewerage systems, commensurate with actual loading, to prevent or minimize the occurrence of overloaded facilities. This is achieved through the "Policy Statement: Advance Planning Requirements for Sewage Treatment Plant Expansions" dated February 11, 1970, issued by the County Pollution Control Officer, issued to all utility companies in Dade County. This is quoted in [illegible] follows:

> "In order to eliminate, or at least minimize any future overloading of sewage treatment plants the following advance planning will be required by this office:
>
> A. Each utility will be required to submit expansion plans and a preliminary construction time schedule for approval when the average daily flow to the plant, for one month, reaches 80% of plant design capacity.
>
> B. Expansion plans shall provide for flow requirements projected at least two years in the future.
>
> C. Utility will be required to start construction based on an approved time schedule when average daily flow reaches 90% of the plant design capacity for any one month. . . . . . ."

D. Elimination of Septic Tanks

The Conferees in Paragraph 7 of their Conclusions and Recommendations, stated that:

> ".....It is expected that the Dade County Metropolitan Commission will be prepared to present their action program to the Conferees at that time (on or before February 1, 1971) which will satisfactorily meet this problem (control of building permits) including a program for the elimination of septic tanks in all urban areas of Dade County".

Control of building permits has been discussed in the preceding section. This section is devoted to the elimination of septic tanks.

It has been estimated that there are some 143,000 existing septic tanks in Dade County serving some half million persons. Unique hydrological features of Dade County such as shallowness of the water table, and porosity of the substrata, coupled with the number of private wells, present opportunities for contamination and constitute a definite health hazard. It is a hazard recognized and acknowledged. The established County policy for elimination of tanks was reconfirmed June 2, 1970, when the County Commission amended Chapter 24, Code of Metropolitan Dade, Relating to Pollution Control.

Portions of the amended code are reproduced as follows:

> Section 6. Chapter 24 of the Code of Metropolitan Dade County, Florida, is hereby amended by adding the following
>
> > Sec. 24-13. Septic Tanks
> >
> > (1) The words "septic tank" as used in this section shall mean any settling tank in which the settled sludge is in immediate contact with sewage flowing through the tank, while the organic solids are decomposed by anaerobic bacterial action (putrefaction).
> > (2) Intent. The board of county commissioners finds that the proliferation of septic tanks in Dade County is a menace to the health and safety of the people of Dade County in that septic tanks are insufficient in the treatment of waste matter and threaten the water supply of Dade County. It is the intent of the board of county commissioners to eliminate over a reasonable period of time the use of septic tanks in Dade County.
> > (3)(a) Where public water supply is used, no septic tank shall be installed, and no permit for

the installation of any septic tank shall be issued by any agency, county or municipality where greater than 1500 gallons per day per unsubmerged acre of land will be generated by the actual and projected use. This section is not to be construed as authorizing the use of septic tanks where the issuance of a permit therefor is otherwise prohibited by law.

(b) The standards for determining the minimum quantity of effluent discharged from such facilities for septic tank usage includes, but is not limited to the following:

(Schedule omitted for brevity.)

(4) From the effective date of this ordinance through July 1, 1971, the provisions of subsections (3)(a) and (b) hereof shall not apply to single residence homes, duplexes and apartment buildings of four units or less, when the legal subdivision, whether by plat or otherwise, creating the tract of land on which said facilities are to be constructed, occured prior to the effective date of this ordinance. (June 12, 1970)

(5) Where a property owner owns a tract of land which fails to meet the standards of subsections (3)(a) and (b) and subsection (4) hereof, he may appeal his denial of a permit to the pollution control hearing board within the time and in the manner prescribed by law. The pollution control hearing board shall authorize the issuance of a permit if it finds the following:

(a) That no additional property is available to the appellant at a price commensurate with the fair market value of the adjoining property, and

(b) That the legal subdivision, whether by plat or otherwise, creating such tract of land, occurred prior to the effective date of this ordinance.

(6) Facilities in actual use and operation as of the date of the enactment of this section which exceed the criteria set forth in subsection (3) hereof, certified by a competent state or county agency as a present or potential health hazard, shall be designated by the pollution control officer as priority sewerage areas. Upon such designation the Dade County Water and Sewer Authority and the county manager shall initiate proceedings for the creation of a special taxing district for sewerage systems for the elimination of the septic tanks therein or take such other commensurate steps as to assure the elimination of the septic tanks therein, on a timely basis.

Designation of existing septic tank areas as "priority sewerage areas" leading to creation of special taxing districts for construction of sanitary sewers, authorized by Section 24-13(6) of the Code of Metropolitan Dade County provides a powerful weapon for elimination of septic tanks. Thus the County has, and will use, this authority to expedite and finance construction of sewers in urban septic tank areas in concert with project funding from bond sales or other sources.

Completion of the pollution abatement plan will make available the description and time schedule for construction of additional sewage collection facilities, as well as financial plans for funding such improvements which will lead to elimination of septic tanks in urban areas.

in the meanwhile until completion of the plan, the continued construction of facilities with the use of septic tanks in Dade County will be on a limited basis. The code provides that no facilities are to be constructed with the use of a septic tank when more than 1,500 gallons per day per net acre will be generated by the projected use of the facility to be constructed. This, in effect, limits construction of residential units on septic tanks to four (4) units per net acre, and duplexes to six (6) units per acre where public water service is available. Where public water service is unavailable, the number of allowable residential units is halved. The net effect of this provision is that single residences and duplexes constructed in areas which do not abut public sewer systems will be on a basis of less density.

The provision for waiving a septic tank permit denial, in the case of a building site in a long-platted development having no sewers, will expire in July 1, 1971, as stated in Section 24-13(4) of the Code.

It is felt that all of these regulatory factors, together with the planning about to commence for sewage disposal facilities, as well as the recently completed sewage disposal facilities, are working to minimize the problem of septic tanks, and will lead to complete the elimination of the tanks in urban areas of Dade County, in the shortest possible time.

Even in the interim planning period, considerable construction of sewerage facilities is being planned or considered, using $32,500,000 from the recently sold cigarette tax revenue bonds as well as budgeted funds, which will lead to substantial reduction of septic tanks, along with improved treatment facilities. Construction completed in December 1970 will permit the elimination of septic tanks in the western half of Hialeah, which generates sewage glows estimated at 3.2 MGD initially. Other projects through the Neighborhood Development Program in the Model City, South Miami, and Goulds-Perrine areas will eliminate thousands of septic tanks during the first six months of 1971 when the homes in these areas are connected to the facilities.

E. Discharges to Lower Biscayne Bay

Paragraph 8 of the "Conclusions, etc.." states that removal of existing municipal and industrial waste discharges to lower Biscayne Bay, including the Biscayne National Monument, shall be accomplished as soon as possible, but not later than January 1, 1974.

This mandate will have a significant impact on the County's Master Plan work during 1971 and all subsequent planning for Dade County for the future of Dade County. The Black Point Sewerage District as outlined in the County's 1961 Plan was predicted to include approximately 401,000 population by the year 2000 and generate at that time some 49 MGD of sewage. This waste was originally programmed to be treated at a treatment plant located at Black Point with the effluent discharged into lower Biscayne Bay. Sewerage plans for the Upper Keys (Island) District would also be affected, however this area is now the Biscayne Bay National Monument, and is not expected to become developed for urban use.

Alternative plans for sewage disposal will be considered in subsequent sewerage planning. It is contemplated, however, that there will be no change of present plans to complete, operate and maintain the Goulds-Perrine Tertiary Waste Treatment Plant now under construction. This facility is approved by all authorities having jurisdiction to be the first 2 MGD stage of an ultimate 8 MGD complete treatment system, including phosphate removal - with space allocated for eventual addition of nitrogen removal when a practical, workable process is better developed.

F. Marine Vessel Discharges

The County operates five small boat marinas and plans a sixth. Use of vessels as domiciles in these facilities is not permitted and on-shore toilet facilities are provided.

In-residence docking at the City of Miami's Dinner Key Marina is being reduced by attrition and no new permits are being issued for such use. The use of shipboard toilets is prohibited in the City's new Miamarina operation.

Facilities at the dozen or so private and municipal marinas will be investigated and provision made for incorporation into master plan facilities where possible. An ordinance affecting waste discharges from marine vessels is being submitted to the County Commission for adoption. This Ordinance will accomplish the goal of preventing the discharge of sewage into the waters of Dade County. It will require marinas to provide disposal facilities to serve vessels.

Difficulties experienced with the use of on-shore facilities by commercial operators are exemplified by the experience at the Dade County New Port of Miami operation at Dodge Island. Here, a sewer main extends the length of the dock with frequent manholes to receive ship discharges. This facility has not been used because, either the ships are not equipped to make use of it or they utilize holding tanks which are more easily emptied at sea. A number of ships, perhaps most, are of foreign registry.

The interstate and international complication's of regulating boat and ship design establish a presumption of wisdom in the preemption by congress of jurisdiction. Whenever the Congressional prerogative is exercised, provision of auxiliary systems on shore will be simple of execution and can be provided in Dade County quite readily.

G. Inventory of Waste Sources

A team of Engineers and technicians from the Federal Water Quality Administration, the Florida Air and Water Pollution Control Board and the Dade County Department of Pollution Control are presently conducting a survey of all identifiable municipal and industrial waste sources. It is presumed that a report of the findings of this team will be available by April 1, 1971 in accordance with the Conferee's directive, and that such report will include correction of the many seriously inaccurate items in the Federal Report included in the transcript of the Federal-State Conference of October 1970.

H. Technical Committee

Invitations have been extended to key personnel of various agencies to participate as members of a technical committee to develop a regional water quality management plan for the conservation and re-use of the waters of Dade County.

5. SUMMARY

A. General

Pursuant to the conclusions and recommendations of the Federal State conferees of the Dade County Enforcement Conference, October 22, 1970, the County Commission of Metropolitan Dade County, Florida reaffirms its previously conceived policy of creating a County-wide sewage disposal system through public ownership and eventual integration of all sewerage facilities in Dade County into one coordinated publicly owned system. In addition, it is the intent of the Board of County Commissioners to eliminate the use of septic tanks in urban Dade County. The Board of County Commissioners confirms that it intends to comply with the general intent and meaning of the conclusions and recommendations of the conferees.

B. Planning

The County Commission of Metropolitan Dade County has entered into a contract for the professional services with its consulting engineers to supplement its staff resources of manpower and expertise for the development and preparation of a metropolitan pollution abatement program. This plan is to be in a form acceptable for certification under applicable State and Federal laws and regulations and shall be submitted to the conferees through the State of Florida on or before November 1, 1971. The plan will include a timetable for construction with priority of projects and financial plans covering the needs projected for the next five years and will comply with the requirements of an interim Metropolitan plan as defined in the Guidelines for Regional and

Metropolitan Plans published by the Federal Water Quality Administration to meet the basic intent of 18 CFR 601.33. The completed Metropolitan Plan for Water Pollution Abatement will be submitted on or before November 1, 1972.

C. Discharge of Effluent to Inland Waters

Until the interim master plan for Water Pollution Abatement is completed and accepted on or before November 1, 1971, permits will not be issued for any new sewage treatment plant which would discharge directly into inland water.

The Pollution Abatement Plan shall consider alternatives to the discharge of treatment plant effluent into inland waters of Dade County, including, but not necessarily limited to, discharge to the ocean, to a disposal well, to the conservation areas of the Central and Southern Florida Flood Control District, or to the Everglades National Park. With the completion of the interim plan in November 1971, there will not be sufficient time thereafter to effectively plan and construct facilities for the total elimination of discharge to inland canals by January 1, 1973, in compliance with the conferees' statement. This objective will, however, be assigned the highest priority and will be completed as soon as practicable, subject only to limitations imposed by fund availability, available construction capability, and an appreciable extent by availability of State and Federal assistance.

D. Treatment for Ocean Outfalls

Dade County will comply with the provisions of the State Statute, General Law 80-72 which calls for not less than secondary treatment for sewage discharged to the ocean.

E. Control of Pollution Sources through Building Permits

Dade County now controls additional pollution sources through limitation and control of building permits, all of which must be reviewed by the County Pollution Control Officer, the County Health Department, as well as other agencies and departments. Under its present regulations Dade County does withhold building permits in subdivisions and utility service areas where there are overloaded systems or there is inadequate treatment.

F. Elimination of Septic Tanks

Completion on November 1, 1971 of the Pollution Abatement Plan will make available the description and time schedule for construction of additional sewage collection facilities, as well as financial plans for funding such improvements which will lead to elimination of septic tanks in urban areas.

In the meanwhile until completion of the plan, the continued construction of facilities with use of septic tanks in Dade County will be on a greatly restricted basis.

Designation of existing septic tank areas as "priority sewerage areas" leading to creation of special taxing districts for construction of sanitary sewers, provides a powerful weapon for elimination of septic tanks. Thus the County has, and will use, this authority to expedite and finance construction of sewers in septic tank areas in concert with project funding from bond sales or other sources.

G. Discharges to Lower Biscayne Bay

As stated above in Section C, the Board of County Commissioners intends to eliminate as soon as is practicable the discharge of treatment plant effluent to inland waters, thus protecting Biscayne Bay and the Monument area. As further stated in Section C, after completion of the master plan, the Commission will authorize design and construction of the necessary facilities to effect the removal of treated waste from the Bay on the highest priority commensurate with the availability of construction capability and influenced to an appreciable extent by availability of State and Federal funds.

H. Marine Discharges

The County Commission does not permit use of vessels as domiciles in County-owned and operated small boat mariners. On-shore toilet facilities are provided.

The use of shipboard toilets is prohibited in the City of Miami Miamarina.

Facilities at the dozen or so private and municipal marinas will be investigated and provision made for incorporation into master plan facilities where possible. An ordinance controlling waste discharges from marine vessels is being submitted to the County Commission.

I. Wastes Inventory

Personnel of the County are now assisting representatives of the Federal Water Control Administration and the Florida Air and Pollution Control Board to conduct a survey and inventory of all identifiable municipal and industrial waste sources. It is anticipated that a report of the findings of this team of engineers and technicians will be available by April 1, 1971 in accord with the conferees' direction, so that it will be available for work upon the master plan.

Conclusions and Recommendations of the Federal-State Conferees
Dade County Enforcement Conference
October 22, 1970

The Conferees, representing the State of Florida and the Department of the Interior, unanimously agree on the following conclusions and recommendations:

1. Pollution of the navigable waters in and adjacent to Dade County, Florida, including the Atlantic Ocean, Biscayne Bay, and tributaries thereto which endangers health and welfare of persons is occurring and is subject to abatement under the Federal Water Pollution Control Act. This pollution is caused by discharges from numerous municipal, domestic, and industrial sources within Dade County.

2. Measures taken to abate this pollution have been inadequate.

3. The nature of delays being encountered in pollution abatement are: complexity of the problem; lack of effective planning, financing, and enforcement of pollution control laws; and lack of a commitment by the community to meet the pollution problem and abate it.

4. The Metropolitan Dade County Commission shall present a master plan for abatement of pollution from all sources in Dade County to the Conferees, through the State of Florida, by November 1, 1971. This plan is to be in a form acceptable for certification under applicable State and Federal laws and regulations. The plan is to contain sufficient detail so that all significant sources are identified. The plan is to include a time schedule for construction, with interim dates for arrangement of financing, preparation of preliminary plans and specifications, preparation of final plans and specifications, award of contracts and initiation of operation of remedial facilities.

5. The cessation of all waste discharges into the inland canal system of Dade County, Florida, shall be accomplished as rapidly as possible but not later than January 1, 1973.

6. A minimum of secondary treatment, providing at least 90% B.O.D. removal and year-round chlorination of the effluent, shall be provided for all waste as required by the State of Florida before discharge to the ocean as rapidly as possible but not later than January 1, 1974.

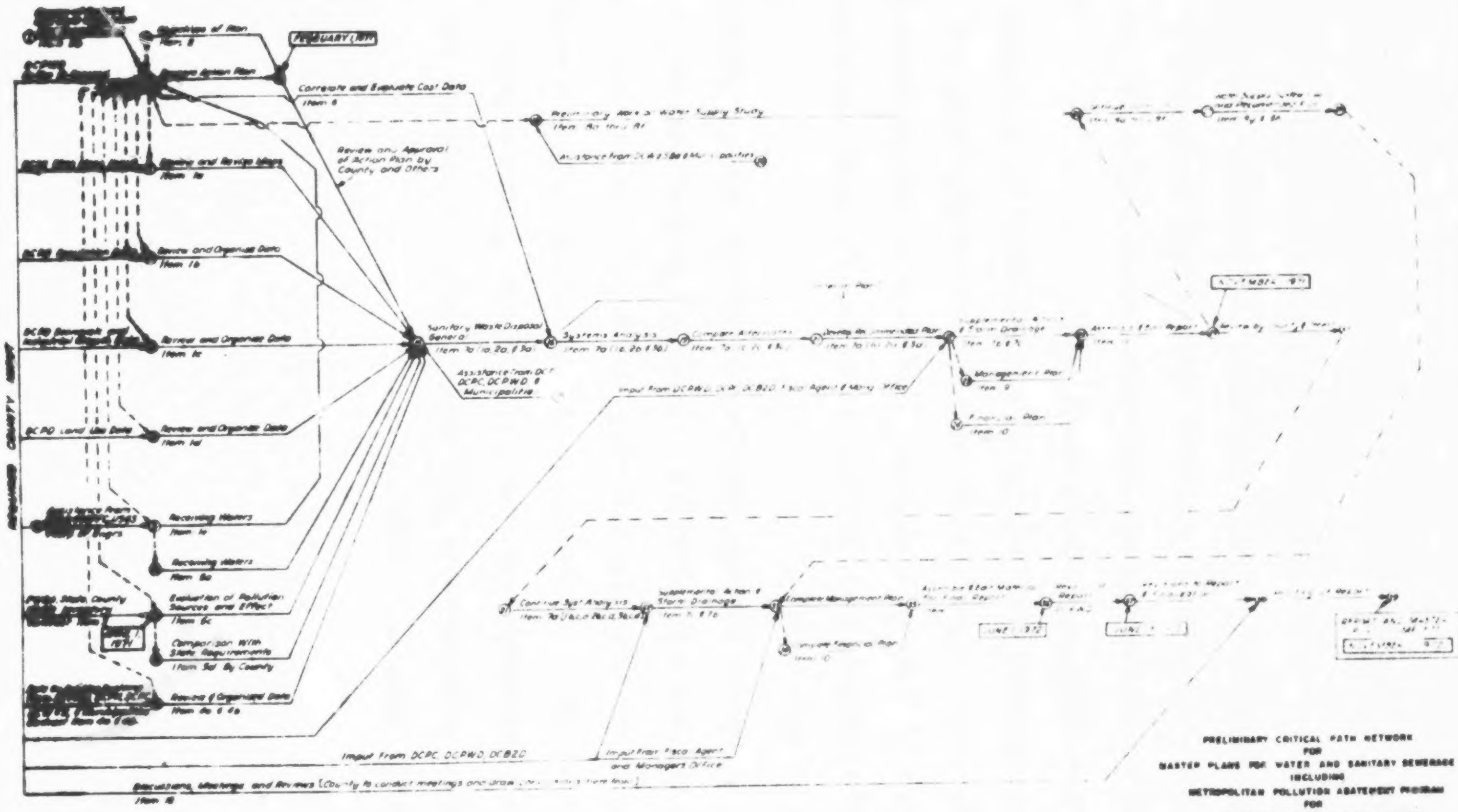
7. All new construction shall be connected to adequate sewage collection and treatment systems. The Conferees will meet not later than February 1, 1971, to consider the question of Dade County's building permit program with the view toward controlling additional pollution sources while the Dade County pollution abatement program is under design and construction. It is expected that the Dade County Metropolitan Commission will be prepared to present their action program to the Conferees at that time which will satisfactorily meet this problem, including a program for the elimination of septic tanks in all urban areas of Dade County.

8. Additional waste discharges to Lower Biscayne Bay, including the Biscayne National Monument, and its tributaries shall be prohibited. This same prohibition shall apply to discharges to canals in Dade County which drain to the Everglades National Park. Removal of existing municipal and industrial waste discharges from these waters shall be accomplished as rapidly as possible but not later than January 1, 1974.

9. All wastes from vessels used as domiciles or business establishments shall be discharged to onshore facilities. The Corps of Engineers is requested to report to the Conferees by February 1, 1971, on its program for removing abandoned hulks, debris, and other obstructions to navigation in the Miami River.

10. An inventory of all municipal and industrial waste sources within Dade County, Florida, shall be initiated immediately by the Federal Water Quality Administration in cooperation with the State of Florida and local officials, a report shall be made to the Conferees by April 1, 1971.

11. A technical committee comprised of the Federal Water Quality Administration, the State of Florida, and the Dade County Pollution Officer shall be established to develop, in cooperation with other Federal, State, and local agencies, a regional water quality management plan for the conservation and reuse of the waters of Dade County. This committee shall report to the Conferees as to its progress and future plans by November 1, 1971.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Adoption of Plan
Item 8
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Item 6
Review and Approval of Action Plan by County and Others
Review and Revise Maps
Item 1a
Review and Organize Data
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Item 10
Preliminary Work on Water Supply Study
Item 8a thru 8c
Input from DCPWD, DCPC, DCBZC, Fisc. Agent & Mang. Office
Review by County & Meetings
Continue Syst Analysis
Supplemental Action & Storm Drainage
Complete Management Plan
Complete Financial Plan
Item 10
Assemble Data Material for Final Report
JUNE 1972
JUNE
Writing of Report
Input From DCPC, DCPWD, DCBZC
Input From Fisco Agent and Managers Office
Evaluations, Meetings and Reviews (County to conduct meetings and draw conclusions from them)
Item 18

NOTE
Items indicated above refer to "Summary of Manpower and Cost Estimates" dated November 18, 1970

PRELIMINARY CRITICAL PATH NETWORK
FOR
MASTER PLANS FOR WATER AND SANITARY SEWERAGE
INCLUDING
METROPOLITAN POLLUTION ABATEMENT PROGRAM
FOR
METROPOLITAN DADE COUNTY, FLORIDA
JANUARY 15, 1971
GREELEY AND HANSEN - CONNELL ASSOCIATES, INC

PLATE 9

MR. GOODE: I will summarize the portions of this report that relate to the Action Plan which is contemplated.

First, in our summary under a General heading it is noted that pursuant to the conclusions and recommendations of the Federal-State conferees October 22, 1970, the County Commission of Metropolitan Dade County reaffirms its previously developed policy of creating a countywide sewage disposal system through public ownership and eventual integration of sewerage facilities in Dade County into a coordinated system.

In addition, it is the intent of the Board of County Commissioners to eliminate the use of septic tanks in urban Dade County. The Board of County Commissioners confirms that it intends to comply with the general intent and meaning of the conclusions and recommendations of the conferees.

The next summary section is under the title Planning.

The County Commission of Metropolitan Dade County has entered into a contract for professional services with its consulting engineers to supplement its own staff resources of manpower and expertise for the development and preparation of a metropolitan pollution abatement program. This plan is to be in a form acceptable for certification under applicable State and Federal laws and regulations and shall be submitted to the conferees through the State of Florida on or before November 1, 1971. This plan will include a timetable for construction with priority of projects and financial plans covering the needs projected for the next five years and will comply with the requirements of an interim metropolitan plan as defined in your Guidelines for Regional and Metropolitan Plans published by the Federal Water Quality Administration. The second phase of that plan, which covers our needs through the year 2000, will be completed and submitted on or before November 1, 1972.

Next, Discharge of Effluent into Inland Waters.

Until the interim master plan for water pollution abatement is completed and accepted on or before November 1, 1971, permits will not be issued for any new sewage treatment plant which would discharge directly into inland water.

The Pollution Abatement Plan shall consider alternatives to the discharge of treatment plant effluent into inland waters of Dade County, including, but not necessarily limited to, discharge to the ocean, to a disposal well, to the conservation areas of the flood control district, or into the Everglades.

I might say parenthetically here that if other alternatives should receive serious discussion, I hope that they will be discussed during this proceeding so that we may be able to incorporate those into our master plan.

With the completion of the interim plan in November 1971, it appears there will not be sufficient time thereafter to effectively plan and construct facilities for the total elimination of discharge into inland canals by January 1 of 1973, just over a year of time, in compliance with the conferees' statement. This objective will, however, be assigned the highest priority and will be completed as soon as practicable, subject only to the limitations imposed by fund availability, by available construction capability, and to an appreciable extent by the availability of outside, namely State and Federal, assistance.

Next, Treatment for Ocean Outfalls.

Dade County will comply with the provisions of the State statute, General Law 80-72, which calls for not less than secondary treatment for sewage discharged to the ocean.

Next, Control of Pollution Sources through Building Permits.

Dade County now controls additional pollution sources through limitation and control of building permits, all of which must be reviewed by the County Pollution Control Officer, the County Health Department, as well as other agencies and departments. Under its present regulations, Dade County does withhold building permits in subdivisions and utilitities service areas where there are overloaded systems or there is inadequate treatment.

Elimination of Septic Tanks.

Completion on November 1, 1971, of the Pollution

Abatement Plan will make available the description and time schedule for construction of additional sewage collection facilities, as well as financial plans for funding such improvements which will lead to the elimination of septic tanks in urban areas.

In the meanwhile, until completion of the plan, the continued construction of facilities with use of septic tanks in Dade County will be on a greatly restricted basis, pursuant to County ordinance.

Designation of existing septic tank areas as priority sewage areas, leading to the creation of special taxing districts for construction of sanitary sewers, provides a powerful weapon for the elimination of septic tanks. Thus the county has and will use this authority to expedite and finance construction of sewers in septic tank areas in concert with the project funding from bond sales or other sources.

Discharges to Lower Biscayne Bay.

As stated above, the County Commission intends to eliminate as soon as practicable the discharge of treatment plant effluent into inland waters, thus protecting South Biscayne Bay and the Monument area. As further stated in Section C, after completion of the master plan, the Commission will authorize design and construction of the necessary facilities to effect the removal of treated wastes from the Bay on the highest priority, commensurate, again, with the availability of construction capability and the availability of State and Federal and local funds.

Next, Marine Discharges.

The County Commission does not permit presently the use of vessels as domiciles in County-owned and -operated small boat marinas. Onshore toilet faciliites are provided.

The use of shipboard toilets is also prohibited at the new Miami Marina.

Facilities at the dozen or so private and municipal marinas will be investigated and provision made for incorporation into master plan facilities where possible. I will refer to an ordinance that is presently before the County Commission a little bit later on this subject.

Wastes Inventory.

Personnel of the County have been and are now assisting representatives of the Federal Water Control Administration and the Florida Air & Pollution Control Board to conduct a survey and inventory of all identifiable municipal and industrial waste sources. This was covered by you at some length yesterday and it is anticipated that a report of the findings will be completed by April 1.

In addition, we are presenting to the conferees today the following documents and reports to demonstrate Dade County's determination to adopt and implement a sound pollution abatement program.

First, and if these need to be entered into the record, Dennis, you might provide a copy for Mr. White and through him to the record keeper.

MR. WHITE: Then you are asking that they be entered into the record, is this correct?

MR. GOODE: Yes.

MR. WHITE: All right, they will appear in the record without objection.

MR. GOODE: First is our Grant Application for Comprehensive Water Pollution Control Planning and both Long and Short Range Water Facilities Planning.

(Which said document follows:)

WATER POLLUTION

ABATEMENT PLANNING PROGRAM FOR THE MIAMI AREA

METROPOLITAN
DADE COUNTY FLORIDA

GRANT
APPLICATION
FOR

COMPREHENSIVE WATER POLLUTION CONTROL PLANNING
(Under Section 3(c), PL 84-660, as amended)

and

LONG AND SHORT RANGE WATER FACILITIES PLANNING
(Under Section 701, Housing Act of 1954, as amended)

Prepared by

Metropolitan Dade County Planning Department
702 Metropolitan Justice Building
1351 N.W. 12th Street
Miami, Florida 33125

February 1971

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Form FWPCA -147(8-67, Grant Application

Proposed Budget

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Map of Metropolitan Planning Area, Miami SMSA

SEC.5 Statement of Problem

SEC.6 Status of Metropolitan Planning

SEC.7 Need for Further Planning and Action Program

SEC.8 Scope and Detail of Work Program

Plan of Study

A Scope and Detail of Total Metropolitan Planning Program

Description of Work Program Elements

Tabular Summary of Work Program

B Federal, State, Interstate and Local Program Coordination

C Tabular Summary of Work Program

D List of All Relevant Federal Grants

E Outlook and Continuity Beyond Period of Study Support.

RECEIVED
FEB 8 1971
PLANNING DEPARTMENT

METROPOLITAN DADE COUNTY · FLORIDA
OFFICE OF COUNTY MANAGER

911 COURTHOUSE
MIAMI, FLORIDA 33130
TEL: 377-5311

February 5, 1971

Mr. John R. Thoman
Regional Director
Federal Water Pollution Control
Administration
Environmental Protection Agency
Suite 300
1471 Peachtree Street, N.E.
Atlanta, Georgia 10109

Dear Mr. Thoman:

Subject: Initial Grant Application
Comprehensive Water Pollution Control Planning
Long and Short Range Water Facilities Planning
Metropolitan Dade County, Florida

Attached hereto please find an advance copy of our initial application for a grant under Section 3(c), PL 84-660, as amended. The application will be submitted to the Metropolitan Dade County Board of County Commissioners on February 16, 1971 for their approval.

The application includes a "Plan of Study" as well as a detailed description of all elements of the work program for preparation of a water quality management plan and pollution abatement program, and a long and short range water supply facilities plan and program. A joint funding arrangement is proposed to permit use of funds obtained through an urban planning assistance grant under Section 701, Housing Act of 1954, as amended, for preparation of the water supply facilities plan. Such joint use of federal funds was endorsed at a meeting of your agency, officials of the Department of Housing and Urban Development and Dade County staff in November 1970.

Upon approval by the Board of County Commissioners, we will transmit to you the appropriate approval documents required under Section 3, Authority, of the application.

Mr. John R. Thoman
Page 2
February 5, 1971

We trust the documentation in the application will permit favorable review by the Federal Water Pollution Control Administration, Environmental Protection Agency, and allow us to proceed with this critically important study.

Sincerely,

R. Ray Goode
County Manager

RRG/ROB:mm
Enclosure

cc - Mr. Dennis Carter
Mr. Reginald Walters ✓
Mr. John McCue

U. S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
WASHINGTON, D. C. 20242

GRANT APPLICATION

COMPREHENSIVE WATER POLLUTION CONTROL PLANNING
(Under Section 3(c), PL 84-660, as amended)

INSTRUCTIONS: Prepare in precise narrative form and include required supporting information and attachments. Identify all attachments by referring to the item numbers on this form. Submit one copy of this form to the appropriate FWPCA Regional Director.

FORM APPROVED
BUREAU OF THE BUDGET NO. 42-R1316

FOR FWPCA USE ONLY

PROJECT NUMBER	DATE RECEIVED
APPROVAL ACTION	
SIGNATURE OF AUTHORIZING OFFICIAL	

1. NAME AND ADDRESS OF DESIGNATED PLANNING AGENCY

Metropolitan Dade County

911 Courthouse

Miami, Florida.

IF THE ABOVE REPRESENTS A CHANGE IN INFORMATION SUBMITTED PRIOR TO THIS APPLICATION, PLEASE INDICATE: ☐

2. DATE OF APPLICATION

Feb. 5, 1971

NOTE: Each application should be accompanied by a letter from the Governor(s) of the State(s) designating the planning agency responsible to administer and coordinate the development of the Comprehensive Basin-wide Pollution Control Plan. (See Section IIA1 of Guidelines) No application can be approved until such letter(s) is or has been submitted.*

☐ LETTER(S) ATTACHED ☒ LETTER(S) NOT ATTACHED

3. AUTHORITY *(Cite and give a brief description of the statutory or other authority of the designated planning agency and attach copies of appropriate documents)**

Section 101 (14) of the Charter of Metropolitan Dade County

4. BRIEF PHYSICAL DESCRIPTION OF PLANNING AREA OR "BASIN" *(Section IIB of Guidelines)*

See attached statement.

5. STATEMENT OF PROBLEM *(Give concise analysis of problem(s) in implementing water quality objectives in the basin. Pinpoint relevant physical, economic, financial, institutional, and other problems requiring solution)*

See attached statement.

6. STATUS OF BASIN PLANNING *(Outline status of related comprehensive water pollution control and water and related land resources planning underway or proposed in the basin. See Section IIB2 of Guidelines)*

See attached statement.

FWPCA-147 (8-67)

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*To be submitted only with first application for multi-year programs and will be made a part of a permanent file in FWPCA Regional Office.

7. NEED FOR FURTHER PLANNING AND ACTION PROGRAM *(Outline planning decisions and action programs required to achieve effective water quality management which applicant proposes to accomplish. See Section IIB of Guidelines)*

See attached statement.

8. SCOPE AND DETAIL OF PROPOSED WORK PROGRAM

A. DESCRIBE THE SCOPE AND DETAIL OF THE TOTAL BASIN PLANNING PROGRAM TO MEET THE NEEDS DESCRIBED IN ITEM 7 *(See Section IIB2 of Guidelines)*

See attached statement.

B. OUTLINE FEDERAL, STATE, INTERSTATE, AND LOCAL PROGRAMS WITH WHICH WORK WILL BE COORDINATED AND TYPE OF COORDINATION *(See Section IIC of Guidelines)*

See attached statement.

8. SCOPE AND DETAIL OF PROPOSED WORK PROGRAM *(cont.)*

C. OUTLINE HOW, WHERE, AND BY WHOM THE SEPARATE PROGRAM ELEMENTS WILL BE DONE, INCLUDING WORK OF SUPPORTING AGENCIES AND CONSULTANTS *(If multi-year program, present by annual segments. See Section IIB and C of Guidelines)*

See attached statement.

The work will be performed in the offices of the various County departments, and in the offices of the County's Consulting Engineer, Greeley and Hansen-Connell Associates.

County personnel and the County consultants have been planning the Program since December 1968, while County personnel have already commenced work on the detailed study.

Work on the Interim Plan Phase will be completed on November 1, 1971, and the Final Program will be completed by November 1, 1972.

D. LIST ALL RELEVANT FEDERAL PLANNING GRANTS WHICH PARTICIPATING AGENCIES RECEIVED OR APPLIED FOR DURING CURRENT FISCAL YEAR *(See Section IIC of Guidelines)*

(See Attached Statement)

E. INDICATE OUTLOOK AND CONTINUITY BEYOND PERIOD OF SUPPORT RECEIVED UNDER SECTION 3(C), FEDERAL WATER POLLUTION CONTROL ACT *(See Section IIB of Guidelines)*

(See Attached Statement)

9. CIVIL RIGHTS ASSURANCE

The applicant shall comply with the terms and intent of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and of the regulations promulgated pursuant to such Act by the Secretary of the Interior (43 CFR 17)

NAME AND TITLE OF CERTIFYING OFFICIAL	SIGNATURE

PROPOSED BUDGET

The budget tabluation should show the planning funds needed by source of funds (non-Federal and Federal) and by classes of expenditure for each year of the application. Since approximations are frequently necessary for years beyond the first, budget estimates for subsequent years may be amended if necessary.

FINANCIAL INFORMATION IN SUPPORT OF PROGRAM APPLICATION

(Furnish information by years if application is for a period more than one year)

10. TOTAL FUNDS (*Federal and non-Federal*) EXPENDED PREVIOUS FISCAL YEAR BY AGENCY FOR BASIN PLANNING	11. TOTAL PROGRAM COST (*Sum of all years listed*)	12. PROGRAM PERIOD FROM (*Date*)	PROGRAM PERIOD TO (*Date*)
$ -0-	$ 293,451	February 1971	November 1972

COST ITEM	FISCAL YEAR Feb. 1971-July 1971		FISCAL YEAR July 1971-June 1972		FISCAL YEAR July 1972-Nov. 1972	
	TOTAL FEDERAL & NON-FEDERAL FUNDS	% OF PROJECT COST	TOTAL FEDERAL & NON-FEDERAL FUNDS	% OF PROJECT COST	TOTAL FEDERAL & NON-FEDERAL FUNDS	% OF PROJECT COST
13. PERSONNEL (*Attach a list of job categories and man-hours on program*)	$		$		$	
14. CONSULTANT SERVICES	40,010.25	25	80,020.50	50	40,010.25	25
15. FUND TRANSFERS TO OTHER SUPPORTING AGENCIES, LOCAL GOVERNMENT AGENCIES, AND OTHERS (*Specify*) See Summary of Work Program Manpower and Cost Requirements	24,480.00	25	48,960.00	50	24,480.00	25
16. SUPPLIES AND MATERIALS (*List major items*)						
17. TRAVEL	1,267.50	25	2,535.00	50	1,267.50	25
18. PREPARATION OF PLAN AND REPORTS	2,242.50	25	4,485.00	50	2,242.50	25
19. OTHER (*Include printing costs and list separately any major items exceeding 5% of total program cost*)						
Computer	2,925.00	25	5,850.00	50	2,925.00	25
Out-of-Pocket Expenses	2,437.00	25	4,875.00	50	2,437.50	25
20. TOTAL FEDERAL AND NON-FEDERAL FUNDS	73,362.75	100%	146,725.50	100%	73,362.75	100%
21. FEDERAL FUNDS 50%	36,681.37	25	73,362.75	50	36,681.38	25
22. NON-FEDERAL FUNDS (*Item 20 minus Item 21*) 50%	36,681.37	25	73,362.75	50	36,681.38	25

1. NAME AND ADDRESS OF DESIGNATED PLANNING AGENCY

1. Legal Name Designated Planning Agency : Metropolitan Dade County Planning Department

2. Address: 702 Metropolitan Justice Building,
   1351 N.W. 12th Street
   Miami, Florida

2. DATE OF APPLICATION

1. February 5, 1971

3. AUTHORITY OF DESIGNATED AGENCY

3. AUTHORITY

See Section 101(14) of the Charter of Metropolitan Dade County, Exhibit "A" attached.

To be forwarded:

- County Commission approval of application
- County Attorney's opinion that the designated planning agency has statutory authority to conduct the planning
- Letter from governor designating the planning agency as the official areawide metropolitan planning agency

4. BRIEF PHYSICAL DESCRIPTION OF PLANNING AREA

4. DESCRIPTION OF PLANNING AREA

The planning area is Metropolitan Dade County, Florida and is the Miami SMSA. This area is characterized by substantial present and projected urban and suburban development as a consequence of rapid population growth. The metropolitan planning area is situated over the Biscayne Aquifer, the source of water supply. Biscayne Bay, the Miami River, lesser streams and an extensive drainage system are within the planning area. The Atlantic Ocean and Florida Everglades are at its periphery. The planning area includes federal, state, metropolitan, municipal and private systems for water supply, sewage disposal, surface drainage and pollution control.

The Miami SMSA is the southernmost major metropolitan area in the United States, and is within the subtropical climate range. As such, the region is home to many species of plant and animal wildlife found in no other part of the nation. The importance of this asset is demonstrated by the millions of visitors who annually pass through the Everglades National Park, where many vanishing species of plant and animal life make their home. The federal government, in recognition of the importance of preserving these species, has recently taken action to create the Biscayne National Monument on a string of islands off the coast of Dade County bordering Biscayne Bay.

Because of Metropolitan Dade County's favorable climatic conditions, it has become one of the nation's leading resort areas. In 1969, over 7.5 million tourists visited the area, more than one-third of the total for the state of Florida. The area is also well known for its abundance of game fish, which attracts additional thousands of sportsmen every year.

The Miami SMSA, in addition to its transient population, has one of the fastest growing resident populations in the nation. Between 1910 and 1960, Metropolitan Dade County's population doubled every ten years to 935,000. By 1970, the area increased to over 1,267,792 permanent residents, and by 1985, it is expected that 2 million people will live and work in Metropolitan Dade County.

Without proper water quality management, the many outstanding natural assets of the Miami SMSA would be seriously threatened with destruction. Examples of this can be found in the severe effects on wildlife that occur in the Everglades National Park when natural and man-made droughts or floods take place. The continued deterioration of Biscayne Bay, if allowed to proceed, could damage the newly established Biscayne National Monument.

The tourist industry, which contributes heavily to Metropolitan Dade County's economic picture, would suffer severely from poor water quality management. If the warm winter-time waters off the coast become sufficiently degraded through pollution, the visiting tourists and sportsmen will seek other locations.

Improper water quality management would severely affect the environment in which Metropolitan Dade County's permanent residents live. Enlargement of this situation would be detrimental to the health of the resident population. At present, approximately 55 percent of Dade County's population is served by septic tanks. Without proper sewage treatment facilities, construction of new homes in Dade County could be severely curtailed if, after July 1, 1971, permits for septic tanks are granted only to homes on very large lots, and all others required to be connected to sewers.

Therefore, proper water quality planning is essential to the continued economic growth and health of the planning area. Without such planning, not only will it be impossible to provide for future population growth, but present residents will find their health and economic prosperity more and more threatened. The unique natural assets of the county will also find their very existence threatened unless water quality measures are initiated. The loss of these natural assets would effect not only Dade County, but also the nation as a whole.

Identification of Planning Area

Metropolitan Dade County, Florida---Miami Standard Metropolitan Statistical Area

Map identifying principal political subdivisions of the area attached hereto.

Metropolitan Dade County is located at the southeastern end of the Florida peninsula. It is bounded on the north by Broward County; on the east by the Atlantic Ocean; its southern boundary extends almost to the Florida Keys; and its western border lies in the mid-Everglades region. With an area of 2,352 square miles, it is the largest of Florida's 67 counties, larger than Rhode Island and approximately the same size as the State of Delaware.

Topographically, Dade County is flat, the land sloping almost imperceptibly from a so-called ridge along the east coast to the Everglades area in the middle and western reaches of the county.

Most of the western half of Dade County, 1,018 square miles all totaled, have been set aside permanently as a natural reservation, partly as the Everglades National Park and partly as a flood plain and water reservoir within the Central and Southern Florida Flood Control District.

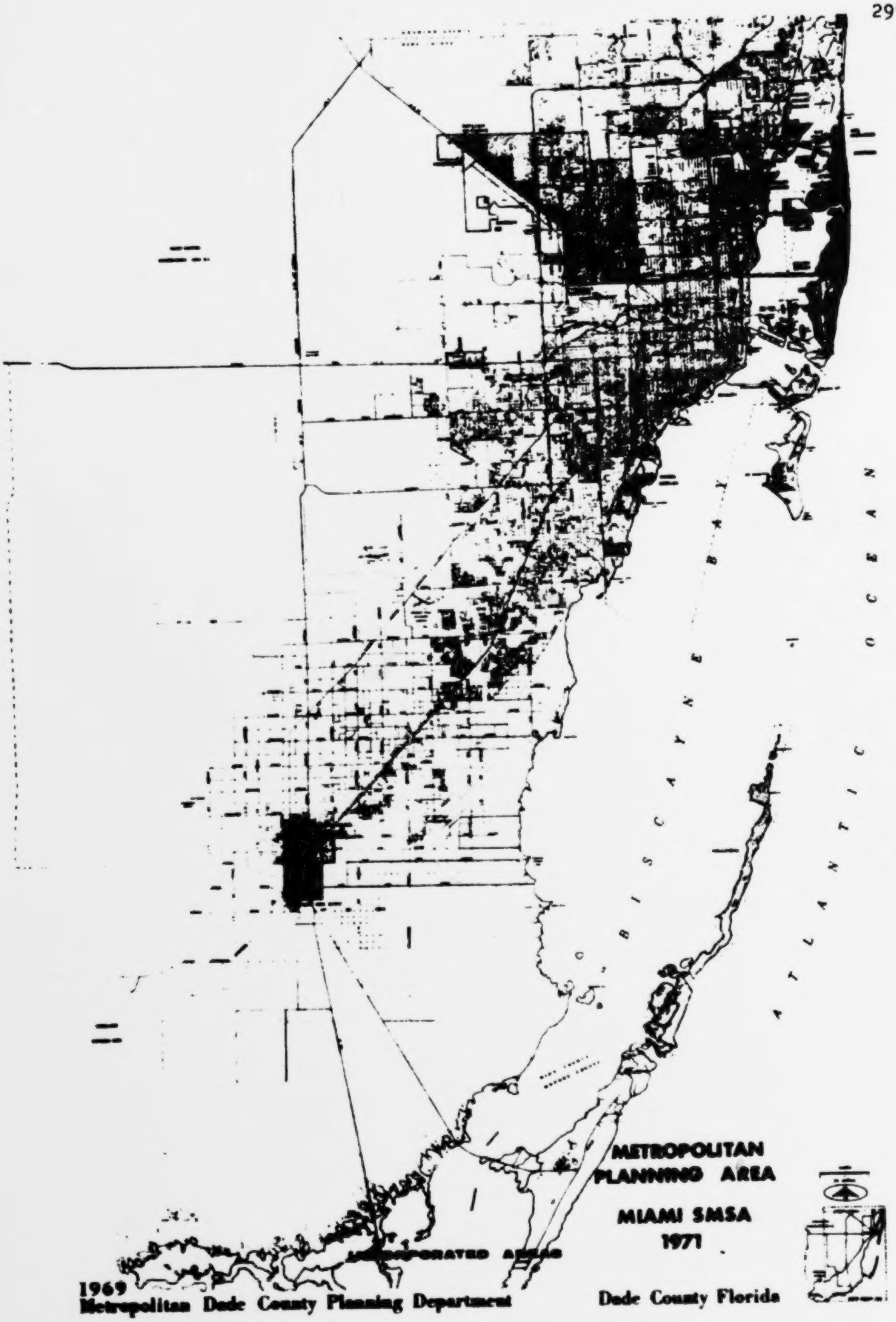
Soil characteristics are varied. Underlying most of the area is lime rock, at varying depths. Surface soils are marl, peet, rockland, and sand. The "Redlands" area along the ridge south of Miami is an important agricultural area.

An estimated 655 square miles of Dade County's total area, extending north and south along the east coast, is suitable for urban type development provided water control works are completed. Of this, approximately 200 square miles is presently urbanized.

Dade County's population growth is almost without parallel in the United States. Dade County's present population was estimated at 1,267,792 as of April 1, 1970 Within the county, there are 27 municipalities which ranged in population from 18 to 291,688 in 1960. A list of the principal cities and their respective population follows:

City	1950 Population	Special Census 1955	1960 Population	1970 Population
Miami	249,276	259,035	291,688	334,859
Miami Beach	46,282	50,981	63,145	87,072
Coral Gables	19,873	29,210	34,793	45,562
Hialeah	19,676	43,135	66,972	102,297
North Miami	10,734	23,463	28,708	34,767
North Miami Beach	2,129	12,161	21,405	30,723
	347,970	417,985	506,711	635,286
Dade County	495,084	703,777	935,047	1,267,792

MAP OF METROPOLITAN PLANNING AREA
MIAMI SMSA



METROPOLITAN PLANNING AREA

MIAMI SMSA
1971

1969
Metropolitan Dade County Planning Department

Dade County Florida

5. STATEMENT OF PROBLEM

5. STATEMENT OF PROBLEM

The fresh waters and ocean waters of Metropolitan Dade County are now polluted. These polluted waters endanger the growth and development of the area and constitute a direct threat to the physical health of Dade County's residents and visitors. In the report "Pollution of the Waters of Dade County," published in 1970 by the Federal Water Quality Administration, the following conclusions are reached:

1. Septic tanks, widely used in Dade County, are public health hazards and contribute to overfertilization and algal nuisances in adjacent waterways.
2. The small package treatment units constitute a potentially significant source of organic and bacterial pollution.
3. The present methods of disposal through ocean outfalls without treatment require modification because of public health hazards and the detrimental effects on water quality.
4. The inland waters of northern Dade County are grossly polluted and are in violation of the Dade County and federally adopted state of Florida water quality standards.
5. The inland waters of southern Dade County are showing signs of severe water pollution as evidenced by fish kills in the area.
6. The major cause of poor water quality in Dade County is inadequately treated municipal sewage effluent.
7. Further study is needed to determine:
    - A. Water quality of central and upper Biscayne Bay.
    - B. The interrelationship between the canal system and the ground water and between the canal system and the estuarine and coastal waters.

If the pollution of Metropolitan Dade County's water system is permitted to continue unchecked, the effect on the health and economic well-being of the area's residents, visitors and businesses will be serious. Health problems caused by drinking contaminated water are obvious. Less obvious, perhaps, are the effects on the economy of the area that could be produced by inadequate water quality control. Without adequate sewage treatment facilities, construction could be halted in many areas, harming an already depressed South Florida housing industry and aggravating the housing supply problem. Builders could be forced to develop in already dense areas presently served by sewers. Industries require large quantities of fresh, uncontaminated water. A shortage of such water would not only injure existing industries, but discourage new industries from moving into Metropolitan Dade County, creating a deterrent to economic growth.

The tourist industry is the major contributor to Dade County's economic picture. The major needs of the tourist industry, aside from the physical facilities, are clean air, sunshine and water. Without the clean water off the beaches--water uncontaminated by untreated or raw sewage from ocean outfalls--the tourist industry could cease to be a viable industry in Dade County.

The effects of a contaminated water supply on the people and economy of Dade County are serious. Dade County is also unique in its abundance of sub-tropical plant and animal life. These natural phenomena are dependent on unpolluted water for their existence. Without proper water quality management, areas such as the Everglades National Park and the Biscayne National Monument, and the many private and local areas of natural beauty, could cease to exist, depriving Dade County and the entire nation of an irreplacable natural resource.

Master plans for the provision of comprehensive water and sewer facilities in Dade County were prepared in 1961. However, these plans are not presently adequate to meet the requirements for Title 18 of the Federal Regulations. Pollution control in Dade County is dependent upon federal funds in the form of construction grants for the construction of adequate treatment facilities. These funds will be granted only if water quality management plans exist which satisfy Title 18 requirements. The purpose of this study is to meet these requirements.

Dade County's existing Master Plans for water supply and sanitary sewerage and sewage disposal from which financial planning was omitted by direction, have not been reviewed and re-evaluated on a comprehensive basis since their completion in 1961. Financing limitations have hindered implementation and left resolution of water and sewerage problems to a number of public bodies and utility companies largely on a local basis.

The Federal-State Enforcement conference in Dade County, October 20-22,1970 resulted in recommendations by the Conferees on a number of specific actions required by the County to abate pollution of the waters of Dade County . Among the recommendations was the requirement that the master plan for sewage disposal be up-dated, recognizing other Conference recommendations, by November 1, 1971.

Sewage disposal plans are drastically affected by current emphasis on protection of the natural ecologic systems in the Everglades and the vicinity of the recently established Biscayne Monument in lower Biscayne Bay. Consideration must also be given to water conservation needs arising from an apparent inability of the hydroligic system in South Florida, during the drought periods, the future compelling needs of urban areas in Dade, Broward and Palm Beach counties, agriculture and the Everglades Park.

6. STATUS OF METROPOLITAN PLANNING

6. STATUS OF METROPOLITAN PLANNING

The Metropolitan Dade County Planning Department has been designated as the metropolitan planning agency for the Miami SMSA, including the 27 municipalities contained therein. This agency is a department of the metropolitan county government which has jurisdiction in areawide functions throughout the county, including general land use transportation, and water and sewer planning. These powers were assigned to the planning department in the Home Rule Charter of 1957, which established the metropolitan form of government in Dade County. Metropolitan planning is thus an integral part of the government's functions, and is recognized as a required effort for the social and economic development of the Dade County area.

Some of the past and present major planning efforts of this department include:

1. the General Land Use Master Plan for 1985, adopted in 1965 as the official development plan for the metropolitan planning area.
2. the Miami Urban Area Transportation Study, completed in 1969, with continuing planning programs underway, and under review for adoption.
3. the Open Space and Recreation Master Plan, adopted in 1969.
4. the Public Library Facilities Master Plan, adopted in 1969.
5. a study of Housing in the Metropolitan Plan, completed in 1970 and under review for adoption.
6. a Community Shelter Master Plan, currently in final stages of preparation.
7. an Educational Facilities Master Plan, recently initiated.
8. a Fire Protection Master Plan, recently initiated.
9. a Downtown Miami Government Center Study, currently in progress.
10. United States Census Coordination Program, completed in 1969.

The planning department cooperates with other county departments and municipal units of government as part of its on-going planning duties. It will serve as the project coordinator under this grant and will provide substantial input (land use, population, transportation and economic projections, etc.) to assist in the pollution abatement planning effort. The county manager will be responsible for accomplishing the program proposed in this application.

Dade County's present areawide master plans for water and sanitary sewerage facilities were prepared in 1961 and have served as development guides for the past ten years. These plans will be updated to develop planning in compliance with recently enacted laws and regulations controlling water pollution. The 1961 plans do not now meet the requirements set forth in Title 18.

The fully developed water pollution abatement plan and water facilities plans will utilize and be influenced by data and conclusions of studies now nearing completion by other federal, state and local agencies. These studies include, but are not limited to:

1. "Probable Hydrologic Effects of Implementing Water and Sewerage Plans, Dade County, Florida", under preparation by the Water Resources Division, Geological Survey, U.S. Department of the Interior.

2. "Limitations and Effects of Waste Water Discharge on the Continental Shelf of the Atlantic Ocean", under preparation by a Federal Water Quality Administration supported team at Florida Atlantic University.

At the present time, there is no plan in preparation for coordinated pollution abatement throughout the entire basin area, as it is loosely identified as the area served by the Biscayne Aquifer, a hydrologic unit underlying Dade County, Broward County and the southern portion of Palm Beach County.

Preparation of such a regional plan is among the recommendations of the Dade County Enforcement Conference, October 22, 1970. The Metropolitan Dade County water pollution abatement and water facilities plan will be an integral part of the regional plan. Coordination of the two will be insured by the technical coordinating committee recommended by the conferees and expanded by this study program.

7. NEED FOR FUTURE PLANNING

7. NEED FOR FURTHER PLANNING AND ACTION PROGRAM:

Since World War II, there has been a continuous flow of new residents to the planning area. Preliminary data from the 1970 Census indicate that Dade County is still experiencing one of the highest rates of population growth in the U.S. The documented "closing" of the western frontier and concomitant shifting of population southward to the sun coasts assure a continued high rate of population growth in the south, including Florida.

Rapid population has resulted in accelerated economic growth. Major changes have occurred in land use as new residential, commercial, industrial, public and recreational patterns have emerged, extensive in area and reflecting a more intensive use of the land.

These trends have taxed and over-taxed the metropolitan systems for water supply, sewage disposal and surface drainage. As these trends are likely to persist throughout the coming decades, there is a crucial need for defining a suitable water resources management program and assuring its implementation through an abatement plan, establishment of the necessary legislative-control procedures and revision of the County's areawide long-range master plans for water and sewerage facilities.

The planning program will provide decisions and action programs for consideration and adoption as shown below.

I. Water Pollution Abatement Plan will include:

A. Immediate action program to implement recommendations of the October 22, 1970 Enforcement Conferences, as to:

1. Cessation of additional septic tank construction in urban areas.

2. Cessation of discharges to canals, the Everglades and waters of Biscayne Monument.

B. Short and long range sewage disposal programs recognizing ocean disposal, deep well disposal and water conservation by recharge of other recycling procedures for treated waste waters.

C. Resolution of the significance of the potential pollution from surface drainage in the Aquifer and other waters, and the need for further planning related to its control and abatement.

D. The implementation of the recommended program, including agency responsibilities, staffing and financing capital and operation and maintenance expenses. These elements are to be integrated with the water supply program.

II. Water Facilities Plan will include:

A. Short and long range water supply and transmission system plans, recognizing Aquifer yields, competing water demands in the hydrologic unit, and alternative supplementary sources.

B. Implementation of the recommended program including agency responsibilities, staffing and financing capital, and operation and maintenance expenses. These elements are to be integrated with the sewage disposal program.

As pointed out in the report "Pollution of the Waters of Dade County," published in 1970 by Federal Water Quality Administration, the consequences of inaction would be severe and increasingly apparent in view of the already seriously polluted state of Dade County's waters. The continued use and expansion of septic tanks, coupled with the shallowness of the water table, porosity of the shallow aquifer and the number of private wells used for water supply and lawn irrigation, present opportunities for contamination and constitute a definite health hazard. Continued use of ocean outfalls constitutes a menace to forms of ocean life and lessens the desirability of the area as a place for swimming, boating and fishing.

The continued use of canals as dumping areas for untreated or partially treated sewage would have increasingly bad effects not only on the resident and tourist population, but also on many forms of natural life found in no other parts of the nation. For example, the Black Creek Canal and the Military Canal, both of which are severely polluted, discharge water in the vicinity of the Biscayne National Monument. Further discharge of polluted waters in this area would have the consequence of diminishing the forms of life found in this preserve.

Many studies, several quite recently published, indicate the seriousness of the pollution of Dade County's waters. The potential effects on the resident and tourist populations, the economy, and the unusual natural life of the area have been well documented. Without a concentrated planning effort aimed at eliminating water pollution in Dade County, the area could diminish as a desirable or even healthy place in which to live, work and visit..

8. PLAN OF STUDY

PLAN OF STUDY

I. Need For The Study

A. Specifically describe the problem

Metropolitan Dade County is one of the fastest growing urban areas in the United States. Preliminary census data for 1970 shows a population increase of 333,000 during the decade of the Sixties. There has also been a proportionate increase in urban problems: transportation, housing and environmental pollution. It is the latter, specifically water pollution, that this study will address itself to. Rapid urbanization has brought about the adverse effects on the quality of the County's fresh water and contiguous ocean water. The magnitude of the problem is just now being realized.

Estimates indicate that approximately fifty-five percent of the homes in Dade County rely on septic tanks for sewage disposal. A small but significant percentage of the homes in the County also rely upon individual wells for potable water supply. Many of the sewage disposal facilities that serve the sewered portions of the County, flow to small neighborhood treatment plants originally installed by developers to meet Federal housing requirements of the 1950's and 60's. Today, most are discharging inadequately treated effluent to inland waters. The present threat of contamination of drinking water by sewage is accented by the fact that all of the County is underlain with a highly permeable strata of limestone which is collectively identified as the Biscayne formation, which is the water supply aquifer for the entire County.

Dade County has existing Master Plans for water supply and sanitary sewerage which have been partially implemented from time to time. They have not, however, been reviewed or re-evaluated on a comprehensive, County-wide basis since their completion in 1961. Sewage disposal facilities for several large portions of the County have been designed and constructed in general accordance with the 1961 Plan though there have been some departures pursuant to updating of segments of the 1961 Plan. Until recently, financing limitations have hindered implementation of these plans and left resolution of water and sewer problems to a number of public bodies and utility companies, largely on a local basis.

Existing sewage disposal plans are substantially affected by the current extreme emphasis on preservation of the existing ecological systems in the Everglades, in the recently established Biscayne Monument in lower Biscayne Bay, and by the increasingly rigid standards imposed by State and Federal agencies. Consideration is also warranted to water conservation needs arising from a frequently discussed, but incompletely documented allegation that the hydrologic system in South Florida cannot meet the future needs of urban areas in Dade, Broward and Palm Beach counties while at the same time meeting fully the desired demands of the Everglades Park and agricultural demands.

B. Why is an immediate solution needed?

The fresh waters and ocean waters of Dade County are now polluted. These waters endanger the growth and development of the area and constitute a direct threat to the physical health of Dade's residents and visitors. If the pollution of Dade's water system continues unchecked, the effect will be disastrous. An immediate solution is imperative.

C. Are there alternative approaches to the problem?

There is no obvious alternative to the study, which could meet the needs of the community and which would be acceptable to interested state and federal agencies. The area needing pollution abatement and sewage disposal facilities is so large, and the cost of such facilities is expected to be of such magnitude, that only through careful planning, can these facilities be designed with value engineering, to achieve the optimum results.

In addition, recent developments in the need to protect the ecology of the environs of Dade County which have been recognized or esteemed in the past as they are today, make it imperative to conduct the study as outlined herein.

D. What would be the result if this project is not undertaken and completed as proposed? In five years?

Besides the aforementioned environmental results, costs for undertaking a project of this type will increase with time parallel to inflationary trends.

It might also be noted that public support for pollution abatement is at its highest point. Five years from now, public apathy again may be the rule instead of the exception.

Only through completion of the proposed study, as outlined herein, and implementation of a satisfactory pollution abatement program can Dade County meet the goals established by its Board of County Commissioners, and which are enumerated below, to say nothing of meeting the requirements of the Federal-State Enforcement Conference:

1. That the County assume responsibility for installation, ownership and operation of the necessary water and sewer facilities in the then unserved areas of the unincorporated parts of Dade County, but that each municipality assume the same responsibility within their boundaries or request the County to assume that responsibility.

2. That the County acquire, by negotiation or condemnation, all private water and sewer utilities within Dade County as rapidly as possible and merge these operations with its own on an overall, integrated operational basis.

3. That the County work cooperatively with the municipalities in Dade County and with the existing municipally owned water and sewage utilities to accomplish the goal of total public ownership and eventual integration into one coordinated, publicly owned system.

II. FWPCA and Regional Strategy

The study has goals which are parallel to the stated goals of both state and federal pollution abatement policies - elimination of pollution of inland and coastal waters in Dade County, and elimination of septic tanks in urban areas.

The study area is a metropolitan area as large as the states of Rhode Island and Connecticut, and can be considered as the major area in a regional area including Broward County and part, if not all, of Palm Beach County. These three counties all depend upon the Biscayne acquifer for water supply and therefore share a hydrological unit which may be construed as a river basin.

The study and the abatement program, including construction of pollution control facilities, are expected and intended to be in full compliance with the Federal Water Quality Act, and the regulations of the state of Florida, and in fact, will require the assistance and financial support of both federal and state programs, in order to be fully effective.

Thus, FWPCA regional strategy may be applied and effected in its widest concept, as the goals are achieved, as follows:

1. Inland and coastal waters are to be cleaned up.
2. New construction is to be served by adequate sewage disposal.
3. Septic tanks in urban areas will be eliminated.
4. Pollution control measures are to be implemented and enforced.

III. Objectives and Scope

A. Define the objectives, both primary and secondary, in order of decreasing importance.

The general objectives and scope are as follows:

The scope must include sufficient detail study to develop a metropolitan pollution abatement plan with means of implementation, tailored to meet the requirements of Section 3 C of the Federal Water Quality Act, influenced further by the conclusions and recommendations of the Enforcement Conference. The program must examine water quality standards, means of providing adequate sewage disposal for all portions of the urban area, present local and state ordinances and laws regulating construction and operation of sewage disposal systems, means of obtaining parallel action and collaboration by the municipalities in construction and operation of sewerage collection and disposal facilities, means of financing construction of facilities necessary to provide county-wide sewerage systems, and to develop a comprehensive master plan for achieving and implementing a metropolitan pollution abatement program.

The interim pollution abatement plan will be completed by November 1, 1971, as recommended by the Enforcement Conference, and the completed plan will be submitted by November 1, 1972.

B. What degree of detail is proposed?

The water pollution abatement plan will recognize the system components which have been built to date, or are planned for early construction, and will include the development of plans for necessary additional facilities and programs. The plan will also recognize increased treatment requirements and will propose "state of the art" options to comply with the Federal Conferees' proposal to eliminate discharges to inland waters and lower Biscayne Bay. Further, the plan will evaluate alternatives for water re-use, for systems management of water and sewer facilities, and for financing of the proposed program.

The Water Pollution Abatement Plan will also include the following:

1. Population analysis and distribution--current and estimated future.

2. Economic and industrial growth--present and estimated future.

3. Land-use--present and estimated future.
4. Receiving waters--use, quality, etc.
5. Present waste sources and characteristics.
6. Existing facilities--description and evaluation.
7. Evaluation of problems.
8. Cost data.
9. Development of alternative pollution abatement and/or water quality enhancement programs, including systems analyses of disposal facilities for the urban populated areas of North, Central and South Dade County.
10. Identification of need for supplemental programs to achieve pollution control objectives, such as zoning, building control, law enforcement, population density limitations, etc.
11. Development of water supply facilities including supply sources, reallocation of water use priorities, induced recharge, etc.
12. Presentation of a recommended plan for the coordinated development of water supply and waste water disposal.
13. Development of a management plan for the systems including coordination and/or integration of existing systems.
14. Development of a financing plan including capital and operating requirements, rate schedules, revenues, financing forms.

C. How, when and by whom will the study be implemented?

The pollution abatement program to be formulated by the proposed study will be implemented by the Board of County Commissioners upon acceptance by the Board. The Dade County Pollution Control Officer will be directed to enforce such new regulations as will be promulgated, with the aid of the County Attorney. The Water and Sewer Authority will be expected to prepare and submit for Commission approval, underwriting and financial plans for funding and constructing pollution control facilities, in accordance with the short- and long-range schedule of improvements to be developed in the study. Operation of the facilities will be the responsibility of the Water and Sewer Authority.

D. Who are the major beneficiaries? How will they benefit?

The major beneficiaries of the study are the residents of Metropolitan Dade County, and the millions of persons who annually journey to the area from the other states as well as from foreign nations to enjoy the natural features of this area:

The year-round mild climate, the ocean and its beaches, the inland waters, the national, state and local parks; and the many recreational opportunities they afford. While these features are beneficial to residents and visitors alike, the area's residents will receive the further benefit of protection of the local economy of which they are a part and upon which their community depends for its continued existence.

IV. Background Information On The Basin And The Problem

A. Describe the basin from a physical aspect (Population centers, economic and industrial development, physical geography, hydrology, water resources, etc.)

(See Section Four - "Description of Planning Area")

B. What are the past and present water and land resource planning and management activities? What agencies have been and are involved?

Obviously, for the proposed study to be effective, its conclusions and recommendations and the program to be implemented, must be compatible with the other agencies both local, state and federal which are involved.

Since 1949 The inland waters of the area have been managed by the Central and Southern Florida Flood Control District for flood control and water conservation, supplemented on the local level by the Water Control Division of the county for control of the secondary works of the total system.

Management of inland waters within the Everglades are influenced further by the Park Service, U.S. Department of Interior, as are waters contacting the Biscayne National Monument Area.

Since 1939 surveillance of the water supply for the area has been maintained by the Geological Survey Section of the Department of Interior in cooperation with the Dade County Public Works Department.

Every effort will be taken to assure protection of the interest of each agency.

C. What data pertaining to the project are available and from what sources? What existing data are there concerning water quality? Water quantity legislation?

Considerable data on water quality, flows, and pollution are available now from the records and published works of the agencies listed above, and will be used wherever applicable.

Present water quality data included in the 1970 FWQA Report "Pollution of the Waters of Dade County, Florida" are to some extent inadequate, and must be supplemented by further stream sampling and analyses to be conducted by the County's Pollution Control Officer, following completion of the inventory of pollution sources now being made by the combined team of local, state and federal technicians and engineers.

Present local codes and state statutes adequately control water quality, and provide consistently improving regulation.

D. What degree of commitment is discernable at State and Local Level for water quality management and pollution abatement?

Dade County is fully committed to develop and implement the water quality management and pollution abatement program. This was confirmed as recently as January 26, 1971 when the Board of County Commissioners approved and adopted "An Action Plan for Pollution Abatement in Dade County."

The Florida Department of Air and Water Pollution Control has demonstrated its commitment by sponsoring water quality legislation and holding numerous conferences in and concerning Dade County, and its municipalities.

E. What actions has EPA taken to date within the area? What other EPA activities are foreseen within the next three years?

The Environment Protection Agency has supported research and study of the effects of waste water discharge to the Atlantic Ocean which would be extremely pertinent to the study. It has also participated in the Dade County Enforcement Conference on October 20-22, 1970. The Agency has rendered valuable and extensive aid, through three construction grants for pollution control facilities during the last two years.

It is anticipated that Dade County's abatement program will receive, and in fact depends upon extensive aid through planning and construction grants in the next three to five years.

V. Conduct and Method

A. Adequacy of Existing Data

See the preceding section.

B. Supplemental Data

It is becoming increasingly apparent that there must be research devoted to ascertain factually the impact of reclaimed waste water on the ecology of the Everglades and the conservation area to determine the relative merits and demerits of discharge to these areas. Importance of this potential water source has been emphasized sharply by the drought conditions now prevalent in the area.

The objectionable and uncertain characteristics of deep-well injection of waste water, and the astronomical costs of pumping all waste to the Atlantic Ocean, clearly dictate the absolute necessity to consider and develop other means of disposal of treated waste, as alternatives for discharge to inland waters, which must be eliminated at the earliest practicable moment.

C. Public Hearings

Two public hearings will be held upon the completion of this study; the first in the presence of the Planning Advisory Board and the second before the Board of County Commissioners. These hearings will give both boards an opportunity to hear first hand the reaction of the public towards the Plan.

If the Boards are satisfied that the Plan will meet the public need and satisfaction they will officially approve it.

D. Interagency Coordination

The Dade County Planning Department in conjunction with the Dade County Public Works Department will coordinate this study through an Interagency Coordinating Committee. This Committee will in an advisory capacity, review and comment upon goals and policy of an interagency nature, obtain and supply inventory data, and review and comment upon the preparation of plans.

The Committee will serve as a medium for the exchange of information between federal, state, county and municipal water and sewer utility officials as well as a forum for new approaches to problems.

The Federal Water Quality Administration will advise the Committee on all aspects of this project.

Members of the Interagency Coordinating Committee will include:

- Dade County Planning Department
- Dade County Public Works Department
- Dade County Department of Public Health
- Florida State Board of Health
- Federal Water Quality Administration
- U.S. Department of the Interior
- State and local water pollution agencies
- State and local water resources agencies
- Water conservation agencies
- Municipal Water and Sewer Officials

E. Methodology for Evaluating Alternatives

Within the constraints necessary to protect the interest of all the affected agencies and areas, the alternate plans will be evaluated on the basis of least cost. This will undoubtedly force compromises in the position of the various factions but should result in the least over-all cost to the public, but still produce an acceptable abatement program.

F. Progress Reports

Progress reports will be submitted by the Planning Department.

G. Implementation Schedules

The Plan will include a detail program for implementation and financing. It will consist of two parts; an initial 5-year phase, to 1975, while the completed plan will cover a 30-year period ending in year 2000.

H. Follow-up and Monitoring Implementation

The state pollution control officer and his staff, with the assistance of the Environment Protection Agency shall effectively monitor the implementation of the program

VI. Description of Action to be Taken

This study will be prepared jointly by Metropolitan Dade County and the consulting firms of Greeley and Hansen, and Connell Associates. Assisting the study team will be state and federal agencies plus the municipalities in Dade County. What each participant of this study will do is outlined on the table entitled "Study Participants: By Work Element". Following is a list of all participants and the abbreviations used to identify them on the above mentioned table:

Dade County Manager's Office	Mgr's Off.
Dade County Planning Department	DCPD
Dade County Pollution Control Office	DCPC
Dade County Public Works Department	DCPWD
Dade County Public Health Department	DCPHD
Dade County Building and Zoning Department	DCBZD
Dade County Water and Sewer Board	DCW & S Bd.
Dade County Water and Sewer Authority	DCW & S Auth.
Central and Southern Florida Flood Control District	CSFFC
Environment Protection Agency	EPA(FWQA)
United States Geological Survey	USGS
United States Corps of Engineers	USCE
Municipalities of Dade County	MUNC
Greeley and Hansen--Connell Associates	Consultant

Agencies of local, state and federal governments who have been designated as participants in this study have either agreed to participate or have a long standing working relationship with the county and can be counted upon to participate as required. Provisions have already been made for funding and staffing the agencies involved.

The Florida Department of Air and Water Pollution Control has already funded and appointed several of its staff to assist in inventorying pollution sources in Dade County.

Dade County has assigned several of its Pollution Control staff to assist state and federal personnel with the pollution inventory. Also Dade County has contracted with its consultants Greeley and Hansen--Connell Associates for engineering services in conjunction with the pollution abatement study.

A timetable and critical path network have been prepared for the action necessary from each participant in the study, and are included in Scope and Detail, Section 8A.

STUDY PARTICIPANTS: BY WORK ELEMENT

Work Elements	Mgr's Off.	DCFD	DCPC	DCPWD	DCPH	DCBZ	DCWS	CSFFC	FWQA	USGS	USCE	MUNC	Consultant
1. Basic Data Collection and Analysis													
a. Mapping		x											x
b. Population		x											x
c. Economic and industrial growth		x											x
d. Land use		x											x
e. Receiving waters		x	x					x		x	x		x
2. Objectives of Plan	x	x			x								x
3. Present Waste Sources and Characteristics		x							x				
4. Existing Collection and Treatment Systems													
a. Update data from Existing Water and Sewer Plan		x		x									
b. Evaluation of systems		x	x	x			x					x	
5. Evaluation of Problems													
a. Review water flow, quality, use													x
b. Conference requirements													x
c. Existing pollution													x
d. Comparison of discharge		x	x		x								
6. Correlation of Cost Data													x
7. Pollution Abatement Program													
a. Sanitary waste disposal		x	x	x								x	x
b. Supplemental action		x	x	x		x							x
c. Storm drainage		x		x				x				x	
8. Water Supply													
a. Existing Facilities		x					x					x	x
b. Present and future quantities		x								x			x
c. Yields of Aquifer		x											x
d. Alternate Supply Sources													x
e. Treatment Requirements													x
f. Correlation of Local Cost Data													x
g. Systems Analyses													x
h. Develop Recommended Plan		x											x

STUDY PARTICIPANTS: BY WORK ELEMENTS
Continued

Work Elements	Study Participants											
	Mgr.'s Off.	DCPD	DCPC	DCPWD	DCPH	DCBZ	DCWS	CSFFC	FWQA	USCE	MDNC	Consultan
9. Management Plan	x	x		x			x					
10. Financial Plan	x	x										x
11. Report Preparation		x										x
12. Conferences with Officials		x										

VII. Schedule

Appended to Section 8-A are two charts, "A Critical Path Network for the Master Plans for Water and Sanitary Sewerage, including the Metropolitan Dade County Pollution Abatement Program", and "Preliminary Schedule", which indicate the various elements of the proposed work program, the critical timing for each activity and the task inter-relationships that exist. Also indicated are the agencies responsible for carrying out each of the work elements. (For a detailed description of each of the work elements, see Section 8A, "Description of Work Elements").

The "Preliminary Schedule for the Master Plans for Water and Sanitary Sewerage" indicates the time required for each activity and the estimated completion date.

Completion of the study is dependent upon the timely completion of several key events. The most critical of these is the completion of the Waste Inventory Study.

VIII. Detailed Cost and Resource Budget

A. Using the network analysis, prepare a detailed cost, manpower and other resources budget by task within each fiscal year.

See Section 8C, "Tabular Summary of Work Program".

B. Identify resources available and show additional required resources which are not available at present levels of operation.

See: (1) Action Plan, page 2-3.
(2) Section 8C, "Tabular Summary of Work Program."
(3) Section 8B, "Federal, State, Interstate and Local Program Coordination".

C. Identify all non-EPA requirements for resources showing the responsible agency. Indicate the degree of certainty that cooperating agencies will actually be able to perform assigned tasks at the time shown in the network.

See: (1) Section 8A, part I, "Plan of Study".
(2) Section 8C, "Tabular Summary of Work Program".
(3) Action Plan

8A. SCOPE AND DETAIL OF PLANNING PROGRAM

8A SCOPE AND DETAIL OF THE TOTAL BASIN PLANNING PROGRAM

As there is not now a comprehensive basin pollution abatement plan, the scope must include sufficient detail study to develop a metropolitan pollution abatement plan with means of implementation, tailored to meet the requirements of Section 3 C of the Federal Water Quality Act, influenced further by the conclusions and recommendations of the Enforcement Conference. The program must examine water quality standards, means of providing adequate sewage disposal for all portions of the urban area, present local and state ordinances and laws regulating construction and operation of sewage disposal systems, means of obtaining parallel action and cooperation by the municipalities in construction and operation of sewerage collection and disposal facilities, means of financing construction of facilities necessary to provide county-wide sewerage systems, and to develop a comprehensive master plan for achieving and implementing a metropolitan pollution abatement plan.

The interim pollution abatement plan will be completed as recommended by the Enforcement Conference, and the fully developed plan will be submitted by November 1, 1972.

For more particular definition of the scope and detail of the total proposed metropolitan planning program, see the attached description of work program, critical path network and work schedule, tabular summary of work program, summary of work program manpower and cost requirements, and summary of manpower and cost allocation for funding which are attached hereto.

Environmental Assessment

A. The Plan will include an environmental assessment which will address the following:

   1. Probable impact of the plan on the environment.

   2. Any probable adverse environmental effects which cannot be avoided.

   3. Alternatives considered with evaluation from environmental standpoint.

   4. Relationship between planned local short-term uses of environment and maintenance and enhancement of long-term productivity.

   5. Any irreversible and irretrievable commitment of resources.

   6. Indicate public objections to plan arising because of environmental issues, if any, and their resolution.

B. At least one public meeting will be conducted within the first month of project life to discuss the planned activities and their impact on the environment and to receive public comment thereon.

C. Two public hearings will be conducted ,one before the Planning Advisory Board and the other before the Board of County Commissioners, for purposes of adopting the Plan. At these hearings the environmental assessment will be discussed as a part of the Plan.

8A SCOPE AND DETAIL OF TOTAL METROPOLITAN PLANNING PROGRAM

Description of Work Elements

WATER POLLUTION ABATEMENT PROGRAM AND WATER FACILITIES PLAN

1. Basic Data Collection and Analysis

   a. Mapping: Base map(s) prepared by the county planning department delineating area and municipal boundaries present and anticipated to the year 2000 will be adapted, as required, by the consultants.

   b. Population: 1970 census data and projections of permanent and tourist populations by decades, including comparisons with projections from other sources, to be prepared by the county planning department; the consultants will indicate to the planning department the necessary organization of the data into appropriate area sub-units and groupings for use in water and sewer utility planning.

   c. Economic and Industrial Growth: Present status and conditions projected to the year 2000 to be prepared by the county planning department and furnished to the consultants in a form suitable for incorporation in the report.

   d. Land Use: Present and projected land use, by decades, to the year 2000, including residential population densities, commercial and industrial development and other special use areas such as solid waste disposal, highway, airport, recreational and agriculture areas. Delineation of anticipated waste generating and thermal pollution producing facilities. The consultants will indicate to the planning department the necessary organization of the data into appropriate area groupings for use in water and sewer utility planning.

   e. Receiving Waters: Determination and general discussion of surface and subsurface waters as to use, quality, assimilative capacity and significant flow characteristics of major water courses.

2. Objectives of Plan

   Statement of anticipated objectives to be attained by implementation of short and long range plans.

3. Present Waste Sources and Characteristics

Inventory of existing points of discharge, quantity and characteristics. Location maps and tabulations of quantities and characteristics prepared as a result of a federal, state and local investigation and sampling programs will be utilized in development of abatement alternatives under Section VII, following.

4. Existing Collection and Treatment Systems

a. Updating of data collected in previous study with respect to changes and additions to:

1) Service areas.
2) Trunk, intercepting and outfall sewers.
3) Pumping stations.
4) Treatment works.

b. Description and evaluation of systems with respect to:

1) Age of system.
2) Type of degree of treatment.
3) Design and actual capacity.
4) Efficiency of treatment due to present conditions.
5) Comments on system maintenance and operation problems.
6) System costs and sources and amounts of income.

5. Evaluation of Problems

a. Review of receiving waters relative to flow, existing quality standards and use.

b. Review of recommendations of Federal-State enforcement conferences.

c. Evaluation of existing pollution sources and their effect on receiving water quality.

d. A comparison of discharges with requirements of State permits.

6. Correlation and Evaluation of Cost Data.

Collection and analysis of local cost data and preparation of generalized construction and operating cost curves for use in evaluating alternatives and determination of funding requirements.

7. Pollution Abatement Program.

a. Sanitary Waste Disposal:

1) North Dade Area.

a) General including a description of the service area, a review of existing systems adequacy, a determination of design parameters for the area including anticipated waste quantities and characteristics and review and re-evaluation of receiving water quality standards and degree of treatment required at previously designated discharge locations, and additional locations to be considered in this study. The advice and consultation of the County Department of Pollution Control will be obtained in this latter phase.

b) Systems Analysis of alternative means of disposal including major pipe lines, pumping stations, treatment facilities and outfalls; consideration of water conservation measures; determination of interim disposal methods for use during the development of the full program; consideration of various methods of sludge disposal.

c) Comparison of alternatives recognizing relative economics of construction and operation, adaptability to phased construction, ability to satisfy immediate needs, adaptability to integration of existing systems into the Master Plan system and options for future alternative decisions based on changes in the geo-sociological environment.

d) Development of a recommended plan including delineation of an initial five year capital improvement program, by years, and, more generally for the subsequent five year period. Estimates of costs will be prepared to provide input data for a financing program including project related annual capital requirements and operation and maintenance costs for the initial five years and average annual requirements for the subsequent five year period. Included will be estimates of acquisition costs for existing private utilities to be incorporated in the plan, related to available book value data, and a suggested priority for acquisition coordinated with the new capital improvements.

2) Central Dade Area - same as above for North Dade Area

3) South Dade Area - same as above for North Dade Area.

b. Supplemental Actions: The consultants will cooperate with the county in the development of short and long range plans of action toward the control of additional pollution sources. This will include, but not necessarily be limited to building and zoning controls, septic tank elimination, enforcement of existing pollution control laws and promulgation of necessary additional laws.

c. Storm Drainage: The consultants will review data and plans developed by the county of existing and proposed storm drainage facilities as they may affect sanitary waste disposal and water supply plans.

8. Water Supply

a. Existing Facilities: Data collected in the previous studies will be updated, with the assistance of the county, with respect to changes in areas franchised and served and significant additions to treatment, pumping and storage facilities and major pipelines and sewers. The existing systems will be considered under the categories of major and minor systems with emphasis placed on the limited number of major systems.

b. Present and Future Quantities: Available data will be collected and analyzed to update previous studies and provide a basis for possible revisions in estimates for future per capita domestic, industrial and commercial requirements. The estimates of future populations and land uses and unit quantities will be used to develop estimates of the total water quantities for areas or districts adapted to use in computer programs for analysis of alternates and for data storage. The data will provide the annual average rates and maximum rates, as pertinent to water facility design.

c. Yields of Aquifer: Available geologic and hydrologic data pertaining to the Biscayne Aquifer will be recorded from available sources and discussed with the U.S. Geological Survey and the Florida Geological Survey in preparation for an evaluation of the adequacy of the Aquifer to meet the water supply needs of the county to the year 2000.

d. Alternate Supply Sources: Analysis will be made of supplemental sources of water supply such as reallocation of water use priorities, recharge, withdrawals from Aquifer other than the Biscayne and desalinization, and recommendations as to their use for supplemental supplies.

e. Treatment Requirements: A review will be made of the characteristics of waters from primary and secondary supply sources and evaluation will be made of treatment requirements to meet federal and state potable water supply standards.

f. Correlation and Evaluation of Local Cost Data: Local construction, operation and maintenance cost data will be recorded from available sources and analyzed to provide accurate correlation of cost data in the files of the consultants to local conditions.

g. Systems Analysis: Bases for long range planning will be established recognizing domestic, commerical, industrial and fire requirements for supply, treatment, transmission, pumping and storage facilities and modifications to service areas.

Revision of previous alternatives will be analyzed recognizing changes in service areas, and water requirements and development of additional alternatives as appear to be feasible. Alternatives will be subject to systems analyses to determine the most desirable long range plan to the year 2000, recognizing and considering phased construction, emphasizing needs to the year 1985; relative economies of scale of treatment facilities balanced against cost of transmission facilities; separate high pressure transmission to ground storage for repumping to the distribution system; location of supply facilities to optimize the development of the Biscayne Aquifer and supplemental supplies, if required.

Alternatives will be compared, recognizing relative economies, adaptability to phased construction, ability to satisfy immediate needs, adaptability to the integration of private water utilities and retention of options as to other alternatives for future decisions based on changes in the geosociological environment.

h. Recommended Plan: Presentation of a recommended plan of development to meet requirements to the year 2000 and including delineation of the initial 5-year capital improvement program by years and more generally for the next five-year phase.

Estimates of costs for the initial phases of the recommended plan will be arranged to provide input data for a combined financing program for water and wastewater facilities, including project related annual capital requirements for the initial five years and average annual requirements for the second five-year period; estimates of acquisition costs for private utilities, related to available book value data, with a suggested priority for acquisition coordinated with the new capital improvements; estimates of annual operation and maintenance expenses related to the proposed construction program and acquisitions.

9. Management Plan

The consultants will consult with and assist the county in the development of a management plan for the systems including: the nature of a county utility organization(s); coordination and/or integration with existing separate, major municipal systems; required additional enabling legislation for systems management financing, operation and maintenance; and, requirements for manpower, recruitment, training, wage and salary scales.

10. Financial Plan

The consultants and county will cooperate in the development of a financing plan recognizing the phased capital and operating requirements of the recommended works, including acquisition of private utilities, of land and rights of way. This plan will include: the establishment of reasonable schedules of charges for water service and wastewater disposal, including connection charges, and estimates of revenue expected therefrom; the forms of capital financing to be used, recognizing general obligation bonds, revenue bonds and special assessments; sources and amounts of grants-in-aid of construction likely to be obtainable; and, sources and amounts of supplementary income, if required in the early years to assure salability of revenue bonds.

The feasibility of the recommended financing program will be established by estimated pro forma statements covering the first ten years of the study period.

11. Preparation of the Report

The results of the studies and investigation will be incorporated in a report, adequately illustrated by maps, charts and figures. The report is visualized as being divided into the following general sections.

a. Summary of the long-range plans for water and wastewater systems and of the recommended action program for the initial five-year period.

b. Basic Data.

c. Wastewater Disposal System.

d. Water Supply System.

e. Administration and Financing the Systems.

f. Appendixes (as required)

Four hundred printed copies of the report will be furnished.

12. Conferences with Officials

In anticipation of numerous meetings with local, state and federal agencies and advisory and citizens' groups for the purpose of review, information and coordination with other programs of the county, the consultants agree to make themselves available for such meetings as they may be directed or requested to attend. The county agrees to conduct such meetings and to interpret or adjudicate any divergent views expressed at such meetings and advise the consultants as to the course of action to be followed as a result thereof.

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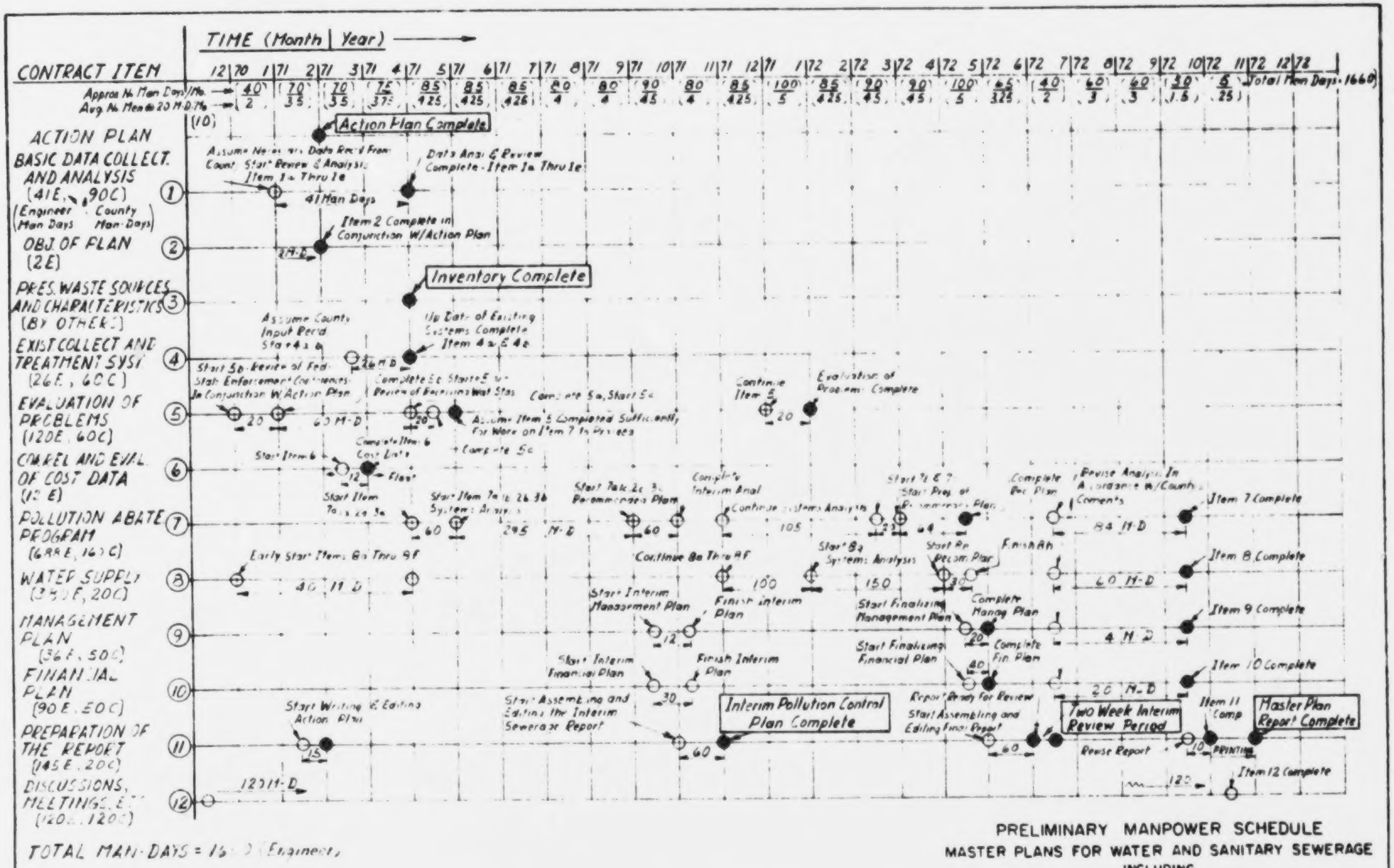
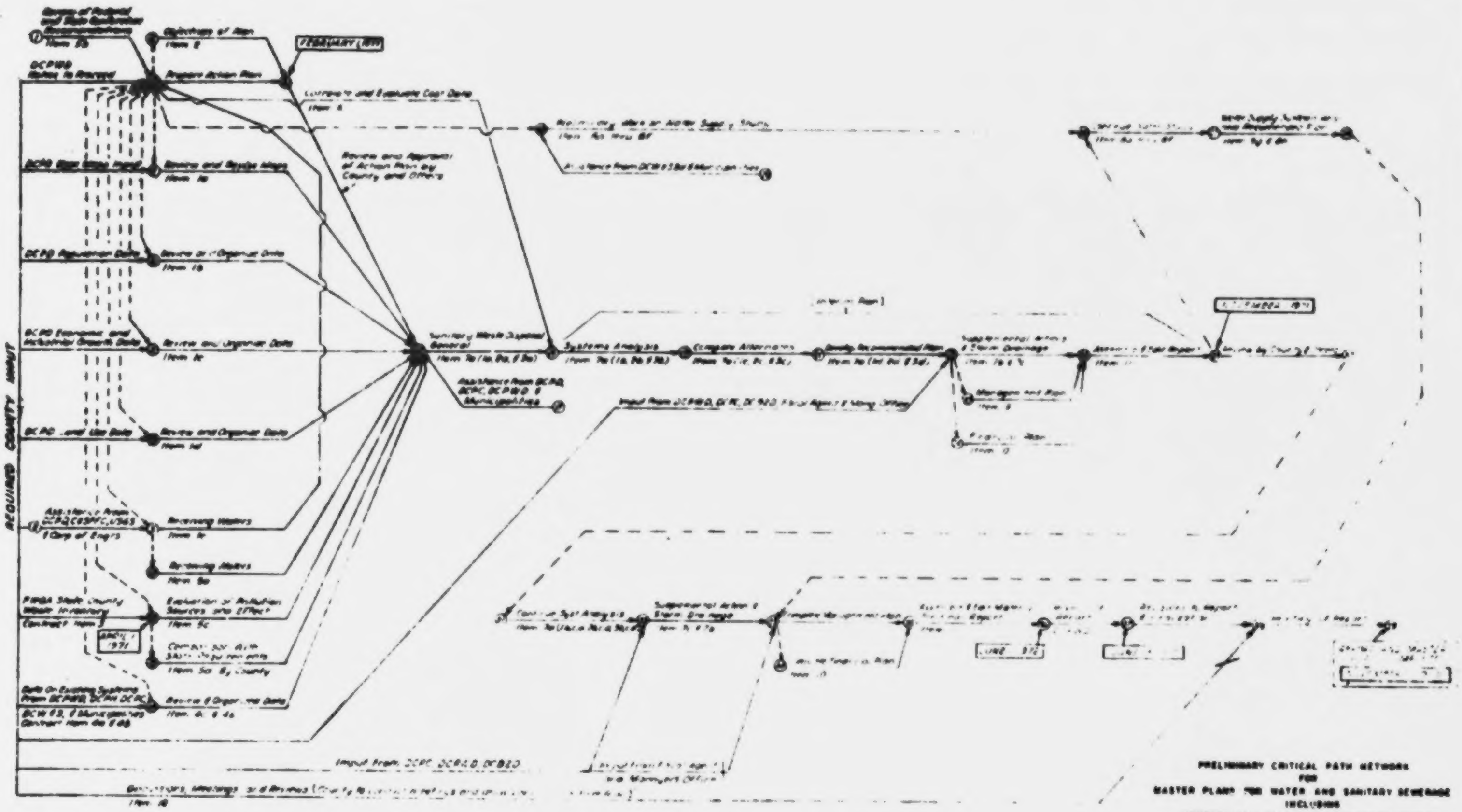


PRELIMINARY MANPOWER SCHEDULE
MASTER PLANS FOR WATER AND SANITARY SEWERAGE
INCLUDING
METROPOLITAN POLLUTION ABATEMENT PROGRAM
FOR
METROPOLITAN DADE COUNTY, FLORIDA

GREELEY AND HANSEN · CONNELL ASSOCIATES INC


REQUIRED COUNTY INPUT
Review of Federal and State Enforcement Recommendations
Item 5b
DCPWD Notes to Proceed
Objectives of Plan
Item 2
FEBRUARY 1971
Prepare Action Plan
DCPD Base Maps Input
Review and Revise Maps
Item 1a
DCPD Population Data
Review and Organize Data
Item 1b
DCPD Economic and Industrial Growth Data
Review and Organize Data
Item 1c
DCPD Land Use Data
Review and Organize Data
Item 1d
Assistance From DCPQ, CGSPFC, USGS & Corp of Engrs
Receiving Waters
Item 1e
Receiving Waters
Item 5a
FWQA State County Waste Inventory
Contract Item
APRIL 1971
Evaluation of Pollution Sources and Effect
Item 5c
Comparison with State Requirements
Item 5d By County
Data On Existing Systems From DCPWD, DCPH, DCPC, DCWS, & Municipalities
Contract Item 4a & 4b
Review & Organize Data
Item 4, & 4a
Compare and Evaluate Cost Data
Item 6
Review and Approval of Action Plan by County and Others
Sanitary Waste Disposal General
Item 7a (1a, 8a, & 9a)
Assistance From DCPQ, DCPC, DCPWD & Municipalities
Preliminary Work on Water Supply Study
Item 8a thru 8f
Assistance From DCWS & Municipalities
Systems Analysis
Item 7a (1a, 8a & 9b)
Compare Alternatives
Item 7a (1c, 8c & 9c)
Develop Recommended Plan
Item 7a (1d, 8d & 9d)
Input From DCPWD, DCPC, DCPZD Fiscal Agent & Mngr. Office
Supplemental Action & Storm Drainage
Item 7b & 7c
Management Plan
Item 9
Financial Plan
Item 10
Item 11
Water Supply Summary and Recommended Plan
Item 8g & 8h
Review by County & Others
SEPTEMBER 1971
Continue Syst Analysis
Item 7a (1a, c, 8a & 9a)
Supplemental Action & Storm Drainage
Item 7b & 7c
Complete Recommendation
Item 10
JUNE 1972
Input From Fiscal Agent via Manager's Office
Input From DCPC, DCPZD, DCBZD
Discussions, Meetings and Reviews
Item 18
NOTE

PRELIMINARY CRITICAL PATH NETWORK
FOR
MASTER PLAN FOR WATER AND SANITARY SEWERAGE
INCLUDING
METROPOLITAN POLLUTION ABATEMENT PROGRAM
FOR
METROPOLITAN DADE COUNTY, FLORIDA
JANUARY 15, 1971
GREELEY AND HANSEN - CONNELL ASSOCIATES, INC.

PLATE 7

8B. FEDERAL, STATE, INTERSTATE & LOCAL PROGRAM COORDINATION

8B. OUTLINE FEDERAL, STATE, INTERSTATE AND LOCAL PROGRAMS

The water pollution abatement plan will be tailored to comply with requirements of Section 3C, Federal Water Quality Act, as influenced by conclusions and recommendations of the Dade County Enforcement Conference. In addition, portions relating specifically to water supply will be tailored to requirements of Section 701 of the Housing Act of 1954.

Study for abatement plan will utilize and consider the recommendations of the County's General Land Use Master Plan, Miami Urban Area Transportation Study, Fire Protection Study, as well as the planning department's demographic studies based upon 1970 census.

Personnel of county planning, public works, pollution control, building and zoning, legal and public health departments will be utilized as well as personnel of the manager's office, the water and sewer authority, and the water and sewer board. Services of these offices may be supplemented by the employment of staff experts of the Oceanographic School of Florida Atlantic University, or the Marine Institute, University of Miami. Personnel of the Florida Department of Air and Water Pollution Control, the Federal Water Quality Administration, the U.S. Dept. of Interior Geological Survey and Corp of Engineers will be asked to assist with data and other information review, and general assistance. The county's efforts will be augmented by its engineering consultants and specialists which may be employed by them.

8C. SCOPE
TABULAR SUMMARY OF WORK PROGRAM.

TABULAR SUMMARY OF WORK ELEMENTS

Work Element	Work to be Performed by	Man Days to Complete	Estimated Cost of Services	% Grant Eligibility FWQA	HUD
POLLUTION ABATEMENT PROGRAM AND WATER FACILITY PLAN					
1. Basic Data Collection and Analysis					
a. Mapping	DCPD	20	1,800	100	
	Consultant	6	840	100	
b. Population	DCPD	40	3,600	100	
	Consultant	12	1,680	100	
c. Economic	DCPD	10	900	100	
	Consultant	5	700	100	
d. Land Use	DCPD	20	1,800	100	
	Consultant	12	1,680	100	
e. Receiving Waters	DCPWD	5	450	100	
	Consultant	6	840	100	
2. Objectives of the Plan	Consultant	2	280	100	
3. Inventory Waste Sources and Characteristics	DCPC	400	36,000	100	
4. Existing Collection and Treatment Systems					
a. Update of Data	DCPWD	30	2,700	100	
	Consultant	6	840	100	
b. Evaluation of Systems	DCPWD	2	180	100	
	DCPHD	10	900	100	
	DCPCD	21	1,890	100	
	DCW & S Bd.	2	180	100	
	Consultant	20	2,800	100	
5. Evaluation of Problems					
a. Review of Receiving Waters	DCPWD	2	180	100	
	DCPC	3	270	100	
	Consultant	40	5,600	100	

TABULAR SUMMARY OF WORK ELEMENTS

Work Element	Work to be Performed by	Man Days to Complete	Estimated Cost of Services	% Grant Eligibility	
				FWQA	HUD
POLLUTION ABATEMENT PROGRAM AND WATER FACILITY PLAN, Continued					
b. Enforcement Conference	Consultant	40	5,600	100	
c. Evaluate Existing Pollution	DCPC	10	900	100	
	Consultant	40	5,600	100	
d. Comparison of Discharges	DCPC	100	9,000	100	
6. Correlation of Cost Data	Consultant	12	1,680	100	
7. Pollution Abatement Program					
a. Sanitary Waste Disposal					
(1) North Dade Area					
(a) General	DCPD	20	1,800	100	
	DCPC	20	1,800	100	
	Consultant	24	3,360	100	
(b) Alternate Means of Disposal	Consultant	120	16,800	100	
(c) Comparison of Alternatives	Consultant	5	700	100	
(d) Development of Plan	DCPWD	10	900	100	
	DCPD	10	900	100	
	Consultant	35	4,900	100	
(2) Central Dade Area					
(a) General	DCPD	20	1,800	100	
	DCPC	20	1,800	100	
	Consultant	20	2,800	100	
(b) Alternative Means of Disposal	Consultant	120	16,800	100	

TABULAR SUMMARY OF WORK ELEMENTS

Work Element	Work to be Performed by	Man Days to Complete	Estimated Cost of Services	% Grant Eligibility	
				FWQA	HUD
POLLUTION ABATEMENT PROGRAM AND WATER FACILITY PLAN, Continued					
(c) Comparison of Alternatives	Consultant	5	700	100	
(d) Development of Plan	DCPWD	5	450	100	
	DCPD	5	450	100	
	Consultant	35	4,900	100	
(3) South Dade Area					
(a) General	DCPD	20	1,800	100	
	DCPC	20	1,800	100	
	Consultant	40	5,600	100	
(b) Alternative Means of Disposal	Consultant	195	27,300	100	
(c) Comparison of Alternatives	Consultant	10	1,400	100	
(d) Development of Plan	DCPWD	10	900	100	
	DCPD	10	900	100	
	Consultant	55	7,700	100	
b. Supplemental Actions	DCPWD	10	900	100	
	DCPC	10	900	100	
	DCBZD	10	900	100	
	DCLD	20	1,800	100	
	Consultant	12	1,660	100	
c. Storm Drainage	DCPWD	45	4,050	100	
	CSFFC	5	450	100	
	Consultant	12	1,680	100	
8. Water Supply					
a. Existing Facilities	DCW & S Bd.	20	1,800		100
	DCPH	5	450		100
	Consultant	24	3,300		100

TABULAR SUMMARY OF WORK ELEMENTS

Work Element	Work to be Performed by	Man Days to Complete	Estimated Cost of Services	% Grant Eligibility FWQA	% Grant Eligibility HUD
POLLUTION ABATEMENT PROGRAM AND WATER FACILITY PLAN, Continued					
b. Present and Future Quantities	Consultant	24	3,360		100
c. Yields of Aquifer	Consultant	36	5,040		100
d. Alternate Supply Sources	Consultant	36	5,040		100
e. Treatment Requirements	Consultant	12	1,680		100
f. Evaluation of Cost Data	Consultant	12	1,680		100
g. Systems Analysis	Consultant	200	28,000		100
h. Recommended Plan	DCPD	20	1,800		100
	Consultant	36	5,040		100
9. Management Plan	DCPWD	10	900	65	35
	DCW & S Auth.	10	900	65	35
	DCPD	20	1,800	65	35
	Mgr.'s Office	10	900	65	35
	Consultant	36	5,040	65	35
10. Financial Plan	DCPD	10	900	65	35
	DCFD	20	1,800	65	35
	DCW & S Auth.	10	900	65	35
	Mgr.'s Office	10	900	65	35
	Consultant	90	12,600	65	35
11. Preparation of the Report	DCPD	20	1,800	65	35
	Consultant	145	20,300	65	35
12. Conferences with Officials	DCPD	100	9,000	65	35
	Consultant	120	16,800	65	35
Subtotal	All Staff	1,210	108,900		
	Consultant	1,660	232,400		
TOTAL MANPOWER COSTS		2,780	$ 341,302		

SUMMARY OF WORK PROGRAM MANPOWER AND COST REQUIREMENTS

Work Element	Work to be Performed by	Man Days to Complete	Estimated Cost of Services
1. Pollution Abatement Plan	DCPD	272.5	$ 24,525
	DCPWD	125.5	11,295
	DCPCD	604.0	54,360
	DCPHD	10.0	900
	DCBZD	10.0	900
	DCLP	20.0	1,800
	DCFD	13.0	1,170
	Mgr.'s Office	13.0	1,170
	DCW & S Bd.	2.0	180
	DCW & S Auth.	13.0	1,170
	CSFFC	5.0	450
	Consultant	1,143.1	160,041
	Subtotal	2,231.1	$ 257,961
2. Water Facilities Plan	DCPP	72.5	$ 6,525
	DCPWD	3.5	315
	DCPCD	-0-	-0-
	DCPHD	5.0	450
	DCBZD	-0-	-0-
	DCLD	-0-	-0-
	DCFD	7.0	630
	Mgr.'s Office	7.0	630
	DCW & S Bd.	20.0	1,800
	DCW & S Auth.	7.0	630
	CSFFC	-0-	-0-
	Consultant	516.9	72,359
	Subtotal	638.9	83,339
Subtotal Manpower	All Staff	1,210	$ 108,900
	Consultant	1,660	232,400
3. Other Costs			
A. Computer Charges	Consultant	N/A	18,000
B. Printing and Publication	DCPD	10.	900
	DCPWD	10.	900
	Consultant	-0-	12,000
C. Travel	DCPD	30.	3,000
	DCPWD	24.	2,400
	Mgr.'s Office	24.	2,400

SUMMARY OF WORK PROGRAM MANPOWER AND COST REQUIREMENTS

Work Element	Work to be Performed by	Man Days to Complete	Estimated Cost of Services
D. Out-of-Pocket Expenses For: Travel LD Tel. & Tel. Testing Special Consultants Reporductions	Consultant	N/A	15,000
TOTAL PROJECT MANPOWER AND COST REQUIREMENTS		2,968	$395,900

SUMMARY OF MANPOWER AND COST ALLOCATION FOR FUNDING ELIGIBILITY

Work Element	Work to be Performed by	Man Days to Complete	Estimated Cost of Services	Funding Eligibility FWQA	Funding Eligibility HUD
1. Pollution Abatement Plan	All Staff	1,088.0	$ 97,920	$ 97,920	-
	Consultant	1,143.1	160,041	160,041	-
2. Water Facilities Plan	All Staff	122.0	10,980	-	$ 10,980
	Consultant	516.9	72,359		72,359
3. Other Costs					
A. Computer	Consultant	N/A	18,000	11,700	6,300
B. Printing and Publication	DCPD	10	900	585	315
	DCPWD	10	900	585	315
	Consultant	N/A	12,000	7,800	4,200
C. Travel	DCPD	30	3,000	1,950	1,050
	DCPWD	24	2,400	1,560	840
	Mgr.'s Off.	24	2,400	1,560	840
D. Out-of-Pocket Expense For: Travel LD Tel. & Tel. Testing Special Consultants Reproduction	Consultant	N/A	15,000	9,750	5,250
TOTAL PROJECT COST			$ 395,900		
Allocation for Joint Funding of Total Project Cost			FWQA: HUD:	$293,451	$102,449

TABLE ONE
SOURCE OF FUNDS

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
ENVIRONMENTAL PROTECTION AGENCY

FOR

POLLUTION ABATEMENT PLAN AND PROGRAM
(Under Sec. 3(c), PL 84-660, as amended)

	Cash Contributions	Services Contributed	
1. Contributors			
A. Metropolitan Dade County	$48,806	$97,920	
B. Municipalities or other Public Agencies	-0-	-0-	
C. Other	-0-	-0-	
Subtotal	48,806	97,920	
2. Total Non-Federal Contribution			$ 146,726
3. Federal Grant Requested			146,725
TOTAL PROJECT COST FOR POLLUTION ABATEMENT PLAN AND PROGRAM			$293,451

TABLE TWO
SOURCE OF FUNDS

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR

LONG AND SHORT RANGE WATER FACILITIES PLAN
(Under Sec. 701, Housing Act of 1954, as amended)

	Cash Contributions	Services Contributed	
1. Contributors			
A. Metropolitan Dade County	$23,170	$10,980	
B. Municipalities or other Public Agencies	-0-	-0-	
C. Other	-0-	-0-	
Subtotal	23,170	10,980	
2. Total Non-Federal Contribution			$ 34,150
3. Federal Grant Requested			68,299
TOTAL PROJECT COST FOR WATER FACILITIES PLAN AND PROGRAM			$102,449

TOTAL COSTS
SHOWING SOURCE OF FUNDS

	Cash Contributions Required	Services Contributed	
1. Contributors			
A. Metropolitan Dade County	$71,976	$108,900	
B. Municipalities or other Public Agencies	-0-	-0-	
C. Other	-0-	-0-	
Subtotal	71,976 (4)	108,900	
2. Total Non-Federal Contribution by County in cash and staff services			$180,876
3. Total Federal Planning Grants			
From: FWQA (2)			146,725
HUD (3)			68,299 (1)
TOTAL PROJECT COST FOR POLLUTION ABATEMENT PLAN AND PROGRAM AND WATER FACILITIES PLAN			$395,900

(1) Present HUD funds being used by the Dade County Planning Department will be utilized for this amount.

(2) FWQA = Federal Water Quality Administration

(3) HUD = U.S. Department of Housing and Urban Development

(4) Net cash cost to Dade County

8D. SCOPE-LIST ALL RELEVANT FEDERAL PLANNING GRANTS TO PARTICIPANTS

STATUS REPORT ON FEDERAL GRANTS
December 31, 1970

PROJECT	PROJECT NUMBER	FEDERAL AGENCY	FEDERAL FUNDS	LOCAL FUNDS	COUNTY DEPARTMENT	TIME PERIOD
PROGRAM AREA: HEALTH **APPROVED**						
Comprehensive Drug Abuse Treatment & Rehabilitation Program	1H19700378-01A1	NIMH	676,227	186,658*	Hospital Dept.	1/1/71-2/28/72
Comprehensive Rehabilitation Service (Construction, equipment & service	JMH-70441	HEW	651,000	217,000	Hospital Dept.	
Radiation Therapy (Addition to JMH)	T-31	HEW	200,000	743,820	Hospital Dept.	1970-1973
West Dade Sanitary Sewage Interceptor	WPC-279	Department of the Interior (EPA)	1,487,310	3,019,690	County Manager	6/69-9/72
Perrine-Goulds: Sewage Treatment Plant & Force Mains	WPC-290	Department of the Interior (EPA)	543,400	1,276,600	County Manager	1/69-2/71
No. Dade Sewage Treatment Plant (Primary Treatment)	WPC-311	EPA	358,710	478,800	County Manager	12-1971
Myrtle Grove-Carol City Sewage Transmission Line	WS-237	HUD	729,000	945,000	County Manager	10/69-7/71
Cuban Refugee Health Program	43-81	Public Health Serv.	3,200,000	-0-	Health	To 6-30-71
Maternity & Infant Care Project	43-85	HEW	1,254,000	433,000	Health	To 6-30-71
Children & Youth Project	43-87	HEW	624,000	209,000	Health	To 6-30-71
Family Planning Project	43-89	HEW	355,000	118,334	Health	To 6-30-71
Air Pollution Program	71D-1101RI	HEW	188,227	125,485	Pollution Control	To 9-30-71
Comprehensive Health Planning Council	41028-01-70	Public Health Serv.	177,020	35,000*	Comp. Health Council	6/1/70-5/30/7
Coronary Care Training Program		HEW	28,935	-0-	Hospital Dept.	1970-1971
Education and Loans Program		HEW	28,875	-0-	Hospital Dept.	1970-1971
V. D. Control Program		HEW	20,000	-0-	Health	1970-1971

STATUS REPORT ON FEDERAL GRANTS
December 31, 1970

PROJECT	PROJECT NUMBER	FEDERAL AGENCY	FEDERAL FUNDS	LOCAL FUNDS	COUNTY DEPARTMENT	TIME PERIOD
PROGRAM AREA: HEALTH **APPROVED** (continued)						
Concept House Drug Program	C-70-08-48	LEAA	65,170	44,780		To 6-30-71
Spectrum House Drug Program	70-08-05	LEAA	40,000	48,581		To 6-30-71
United Fund Regional Information Center	70-08-18	LEAA	15,000	10,000		To 12-31-70
Adolescent Female Drug Treatment Center	70-08-20	LEAA	19,001	53,354		To 6-30-71
Operation Self-Help Drug Program	70-08-27	LEAA	20,000	13,662		To 12-31-70
PENDING						
Nurse Epidemiologists: Assessment of Effectiveness	CC 00581-01	HEW	180,800	-0-	Hospital Dept.	4/1/71-3/31/74
Sunny Isles Sewage Treatment Plant (Primary Treatment)		EPA	340,300	567,700	County Manager	12-1971
N. E. Dade Ocean Outfall	WPC 357	EPA	2,751,500	5,886,500	County Manager	12-1973
Perrine-Goulds: Water Treatment Plant and Transmission Lines	WS-251	HUD	587,200	810,800	County Manager	1/71-9/72
Urban Systems Engineering Demonstration (Waste Management)	USE-2	HUD	115,000	62,000	County Manager	1 year
PROJECTED						
Water Pollution Control		EPA	84,444	28,148	Pollution Control	1 year
So. Dade Primary Health Care Delivery System		OEO HEW	3,000,000 2,700,000	-0- 300,000	Hospital Dept.	

STATUS REPORT ON FEDERAL GRANTS

December 31, 1970

PROJECT	PROJECT NUMBER	FEDERAL AGENCY	FEDERAL FUNDS	LOCAL FUNDS	COUNTY DEPARTMENT	TIME PERIOD
PROGRAM AREA: ECONOMIC & SOCIAL WELL-BEING						
APPROVED						
Rehabilitation Program-'Dadefields"	72-P-20142/4-02	HEW	34,150	29,880	Juvenile Court	10/1/70-9/30/71
Manpower Planning Coordination (CAMPS)	10-4-05-M	Dept. of Labor	39,452	-0-	County Manager	6/9/70-6/9/71
Comprehensive Manpower Planning (CEP)	1608-G	Dept. of Labor	20,000	-0-	Manpower Division	60 days to 2/21/71
Neighborhood Youth Corps II	R-1075-12	Dept. of Labor	418,870	-0-	Welfare Dept.	9/27/70-7/17/71
PENDING						
Neighborhood Facilities Project: Homestead-Florida City		HUD	191,553	95,777	County Manager	1 year
PROGRAM AREA: LEISURE TIME						
APPROVED						
Urban Beautification Demonstration Grant (Linear Park)	BD-1	HUD	402,111	402,111	Planning Dept.	6/24/70-1/1/73
Open Space Projects:						
1968, 3 parks	OSC-39	HUD	329,671	329,671	County Manager	To 4/16/71
1968, 2 parks	OSC-42	HUD	402,656	402,656	County Manager	To 4/23/71
1970, Model City	OSC-36	HUD	1,078,386^{c}	-0-	County Manager	To 9/18/71
1970, 3 parks (acquisition) 2 parks (development)	OSC-69	HUD	424,771	421,071	County Manager	To 9/18/71
Land and Water Conservation Fund: Black Point	12-00032	BOR	215,000	215,000	County Manager	To 12/31/71
PROGRAM AREA: PROTECTION OF PERSONS AND PROPERTY						
APPROVED						
Short Take Off and Landing STOL	70DF-036	LEAA	127,612	-0-	Public Safety Dept.	5/70-5/71

STATUS REPORT ON FEDERAL GRANTS
December 31, 1970

PROJECT	PROJECT NUMBER	FEDERAL AGENCY	FEDERAL FUNDS	LOCAL FUNDS	COUNTY DEPARTMENT	TIME PERIOD
PROGRAM AREA: PROTECTION OF PERSONS AND PROPERTY						
APPROVED (continued)						
Organized Crime Training Course	70DF-104	LEAA	75,550 2,400	-o-	Public Safety Dept.	7/70-12/71
Omnibus Crime Control Act "Video Tape Training Program"	C-70-07-01	Justice	67,916[d]	-o-	Public Safety Dept.	7/70-6/71 (2nd yr of 5yr program)
Behavior & Attitude Modification in Jail Setting	71-DF-513	LEAA	94,910	-o-	Corrections & Rehab	To 10/30/71
Regional Satellite Crime	C-70-07-02	LEAA	70,281[d]	-o-	Public Safety Dept.	7/70-6/71(1st yr of 5 yr program)
Southeast Florida Institute of Criminal Justice		LEAA	859,267	-b-	Public Safety Dept.	5 years
Traffic Accident Computerized Prediction Program	TR-70-004	DOT	239,136	-b-	Public Safety Dept.	
D-4 Specialized Equipment "Owl-Eye"	71-10-12	LEAA	7,500	-b-	Public Safety Dept.	10/70-9/71
PENDING						
Helicopter "COP"		LEAA	449,900	-b-	Public Safety Dept.	12 months
Edex Drivocator System		DOT	69,920	-o-	Public Safety Dept.	10/1/70-9/30/72
Safe Streets Unit Project[e]	71-DF-653	LEAA	149,709	-b-	Public Safety Dept.	12 months
Regional Police Communications		LEAA	1,200,000		Public Safety Dept.	5 years
Regional Criminal Justice Communications System		LEAA	1,960,000[d]	-o-	Public Safety Dept.	3 years
Regional Organized Crime Task Force		LEAA	600,000[d]	-o-	Public Safety Dept.	5 years

STATUS REPORT ON FEDERAL GRANTS

December 31, 1970

PROJECT	PROJECT NUMBER	FEDERAL AGENCY	FEDERAL FUNDS	LOCAL FUNDS	COUNTY DEPARTMENT	TIME PERIOD
PROGRAM AREA: PROTECTION OF PERSONS AND PROPERTY						
PENDING (continued)						
Dade County Municipalities Criminal Justice Command		LEAA	900,000[d]	-b-	Public Safety Dept.	5 years
Drug Abuse Center		LEAA	973,050[d]	-b-	Public Safety Dept.	5 years
Committing Magistrate Proposal		LEAA	99,248	302,200	County Manager	12 months
Prisoner Vocation Training (automotive repair)		LEAA	85,797	-b-	Corrections & Rehab.	12 months
Drug Abuse Treatment Program		LEAA	62,054	61,284[b]	Corrections & Rehab.	12 months
PROJECTED						
Crime Scene Technology Program		LEAA	168,000	-b-	Public Safety Dept.	2 years
Florida Law Enforcement Closed Circuit T.V. Network		LEAA	1,056,000[d]	-b-	Public Safety Dept.	5 years
Police Helicopters Regional Aircraft/Water Patrol System		LEAA	1,500,000[d]	-b-	Public Safety Dept.	5 years
Public School Coordination Program		LEAA	450,000[d]	-b-	Public Safety Dept.	5 years
Youth Rehabilitation and Prevention Program		LEAA	900,000[d]	-b-	Public Safety Dept.	5 years
PROGRAM AREA: TRANSPORTATION						
APPROVED						
Urban Mass Transportation Technical Study	T9-1	DOT-UMTA	266, 180	133,090	Traffic & Trans.	To 3-71
Miami International Airport: Runway-Construction Lighting	9-08-027-C734	FAA	180,371	186,766	Port Authority	Began 6-67

STATUS REPORT ON FEDERAL GRANTS

December 31, 1970

PROJECT	PROJECT NUMBER	FEDERAL AGENCY	FEDERAL FUNDS	LOCAL FUNDS	COUNTY DEPARTMENT	TIME PERIOD
PROGRAM AREA: TRANSPORTATION **APPROVED** (continued)						
Homestead Airport: Land Acquisition Runway Construction	9-08-053-D703	FAA	219,274	23,826	Port Authority	**Began 6-67**
Homestead Airport: Light Run-way and Taxi-ways	9-08-053-D804	FAA	51,114	51,114	Port Authority	**Began 4-68**
Opa-locka Airport: Light Run-ways and Taxi-ways	9-08-054-D704	FAA	50,422	50,422	Port Authority	**Began 6-67**
Opa-locka Airport: Land Acquisition	9-08-054-D705	FAA	490,000	490,000	Port Authority	**Began 6-67**
Miami International Airport: Reconstruct Aircraft Gate **Areas, Construct Light & Mark Exit Taxi-ways**	9-08-027-C936	FAA	82,500	82,500	Port Authority	**Began 4-69**
Training & Transition Airport: Install HIRL; Run-way 9R/27L & MITL; parallel & connecting Taxi-ways. Install lighted wind cone with segmented circle & 36" rotating beacon	9-08-083-7002	FAA	163,202	163,202	Port Authority	**Began 9-69**
Mass Transportation Act (Bus Purchase)	FLA-UTG-7	DOT	2,566,667	1,283,333	Metro Transit Authority	1969
Mass Transportation Act[k] (locked fare boxes)	FLA-UTG-6	DOT	176,000	88,000	Metro Transit Authority	1969
PENDING						
Urban Mass Transportation Technical Study Amendment		DOT-UMTA	176,390 additional	88,195	Traffic & Trans.	To [illegible]-73
PROGRAM AREA: COMMUNITY DEVELOPMENT **APPROVED**						
Neighborhood Development Program	A-1	HUD	17,571,391[f] 26,587,120[g]	10,518,594[h]	HUD	1970

STATUS REPORT ON FEDERAL GRANTS

December 31, 1970

PROJECT	PROJECT NUMBER	FEDERAL AGENCY	FEDERAL FUNDS	LOCAL FUNDS	COUNTY DEPARTMENT	TIME PERIOD
PROGRAM AREA: COMMUNITY DEVELOPMENT APPROVED (continued)						
So. Florida Everglades Area Planning Council - Planning Program	P 135	HUD	31,623	11,247[a]	Planning Dept.	6/30/70-6/29/71
Advances for Public Works Planning Program (Loan)	P-3130	HUD	80,750[k]	20,200	Public Works	Began 1963
Urban Renewal Project #1	R-10	HUD	15,296,197	5,207,682	HUD	Began 6-9-65
Reservation for 3,000 Low-Income Housing units	5-F	HUD	1,200,000 (Preliminary Planning Loan)	-0-	HUD	Until units included under ACC
Low-Income Housing-600 Units for Elderly and 52 units for Family	5-26	HUD	9,787,272[i]	-0-	HUD	End of Const. Est.-1972
Special Subsidy: Elderly, Displaced Large Families, and Low Income		HUD	485,040	-0-	HUD	7/1/70-6/30/71
Low-Income Housing (Scattered Sites) 416 units for Family, 99 units for Elderly.	5-27	HUD	12,871,969[i]	-0-	HUD	End of Const. 12/13/72
Annual Contributions for payment of Bonded Indebtedness	5-1 thru 16, 18 19, 24	HUD	2,161,566	-0-	HUD	7/1/70-6/30/71
Modernization	5-2, 3, 4, 5, 10	HUD	5,724,255		HUD	7/1/68-6/30/71
Contributions rec'd.-Leased Housing	5-21	HUD	1,301,207		HUD	7/1/70-6/30/72
Low-Income Housing 42 Units for Elderly	5-37	HUD	649,336[i]	-0-	HUD	End of Const 4-30-71
Low-Income Housing 328 Units for Families	5-53	HUD	7,975,667	-0-	HUD	End of Const. 7/1/72

STATUS REPORT ON FEDERAL GRANTS
December 31, 1970

PROJECT	PROJECT NUMBER	FEDERAL AGENCY	FEDERAL FUNDS	LOCAL FUNDS	COUNTY DEPARTMENT	TIME PERIOD
PROGRAM AREA: COMMUNITY DEVELOPMENT PROJECTED						
Concentrated Code Enforcement Program		HUD	790,000	260,000	HUD	3 years
Low-Income Turnkey Housing 243 Elderly and 236 units	Fla 5-23, 5-35, 5-38, 5-39, 5-46	HUD	9,709,353	-0-	HUD	Est. 2 years
PROGRAM AREA: MANAGEMENT & POLICY FORMULATION APPROVED						
So. Miami Comprehensive Planning Program	P-115	HUD	14,996	7,498[1]	Planning Dept.	To 1/31/71
701 Comphrehensive Planning Program	P-132	HUD	135,817	67,908[1]	Planning Dept.	6/30/70-6/30/71
701 Urban Planning-Census Data incorporation into Info.System	P-124	HUD	9,154	4,577	County Manager	5/70-7/70
701 Planning Assistance: Minority Group Work Study Programs.	P-138	HUD	22,377	11,188	Planning Dept.	6/30/70-6/30/71
701 Planning Assistance: Model City Commercial Area Study	P-137	HUD	32,044	16,023	Planning Dept.	6/30/70-6/30/71
PENDING						
Technical Advisory & Information Service grant.		HUD	30,000	15,000	Planning Dept.	
MULTI-PROGRAM AREA PROJECTS APPROVED						
Model City Program-1st Action Year	ME-09-002	HUD	9,104,153	-b-	HUD	2/28/71
Community Improvement Program	R-19(CRP)	HUD	820,816	410,408	County Manager	4/18/72

STATUS REPORT ON FEDERAL GRANTS

December 31, 1970

Footnotes

[a] Other funds provided through other sources

[b] Non-cash "in-kind contribution"

[c] 50% of total made up of Model City Supplemental Funds

[d] Through Regional Organization

[e] Project approved January, 1971

[f] Temporary Loan Funds

[g] Capital Grant Funds (Includes $12,172,311 committed funds carried over from prior NDP year, and $1,650,000 additional funding).

[h] Total Loan. Local Funds indicate amount paid back to date

[i] Funds obtained by sale of temporary notes backed by Federal government

[j] Local share contributed by municipality

[k] Concluded prior to December 31, 1970

[l] Local share from Model City supplemental Funds

Code for Federal Agencies

BOR	Bureau of Outdoor Recreation	HEW	Health, Education and Welfare	OEO	Office of Economic Opportunity
DOT	Department of Transportation	HUD	Housing and Urban Development	U[illegible]A	Urban Mass Transportation Adm
EPA	Environmental Protection Agency	LEAA	Law Enforcement Assistance Administration		
FAA	Federal Aviation Administration	NIMH	National Institute of Mental Health		

8E. SCOPE - OUTLOOK & CONTINUITY

8E OUTLOOK AND CONTINUITY BEYOND PERIOD OF SUPPORT

After defining its long-term policy determination to provide county-wide water and sanitary sewer service to the urban areas, the Board of County Commissioners created the Metropolitan Dade County Water and Sewer Authority in January 1970.

The Authority has been charged with the responsibility of designing, constructing, purchasing and operating water and sewerage systems, as well as the authority to negotiate with the municipalities for such services. Present policy and plans are to utilize revenues from such systems to support revenue bond sales, combined with the aid of federal and state grants, to construct or purchase the required facilities. Thus, once a revenue base is established, the system should become ever stronger with the passage of time.

The Authority, then, is in a position of responsibility to foster the continued growth of the pollution abatement program in compliance with the regulations established by the State Department of Air and Water Pollution Control, and the various federal agencies, and to cooperate with all the municipalities to effect a county-wide abatement program. The County's Pollution Control Officer will continue to implement and enforce present pollution control regulations.

MR. GOODE: This was adopted by the Board of County Commissioners on February 16, 1971. Numerous conferences have been held with Federal and State pollution enforcement agencies to determine the ingredients, the depth and scope of this master plan.

The cost of this study between now and November of 1972, a 20-month period, is estimated to be $395,000. Of this sum, approximately $232,000 is estimated to be spent on the services of consultants which are needed to make the specialized studies required for this plan that are beyond the scope that can be handled by our existing staff or local agency.

A total of 2,968 man days is estimated to be required to complete this plan, of which approximately 1,660 man days will be required of consultants, the remaining 1,308 man days to be performed by county staff from 10 different departments.

As I said earlier, this interim plan is scheduled to be prepared by November 1, 1971, in compliance with the conferees' prior conclusions. Completed master plan for pollution abatement, emphasizing sewage disposal and water supply for anticipated needs through the year 2000, is scheduled for completion a year later on November 1, 1972.

Also submitted for this record is a Supplement to the 1961 Master Plan for Sanitary Sewerage for Metropolitan Dade County, which is intended to serve as Dade County's interim metropolitan plan for pollution abatement until the Master Plan can be updated and submitted later this year.

(Which said document follows:)

SUPPLEMENT TO

METROPOLITAN DADE COUNTY
1961 MASTER PLAN FOR SANITARY SEWERAGE

Prepared For

BOARD OF COUNTY COMMISSIONERS

METROPOLITAN DADE COUNTY
FLORIDA

GREELEY and HANSEN
CHICAGO, ILLINOIS

CONNELL ASSOCIATES, INC
MIAMI, FLORIDA

Consulting Engineers

January 15, 1971

0340

SUPPLEMENT TO
METROPOLITAN DADE COUNTY
1961 MASTER PLAN FOR SANITARY SEWERAGE

Prepared For
THE BOARD OF COUNTY COMMISSIONERS
METROPOLITAN DADE COUNTY
FLORIDA

January 15, 1971

GREELEY AND HANSEN - CONNELL ASSOCIATES, INC.
Chicago, Illinois Miami, Florida

INTRODUCTION

Authorization

This report is submitted pursuant to authorization by the County Commission of Metropolitan Dade County in accordance with the terms of an Agreement dated November 17, 1970. This Agreement was executed by the County Manager pursuant to the authorization in Resolution R-1390-70 and passed and adopted by the County Commission on November 17, 1970.

General

In November 1961, a Master Plan for Sanitary Sewerage for Metropolitan Dade County was prepared by Greeley and Hansen-Connell Associates, Inc., a joint venture. In the intervening nine years, changes have occurred in the economic and geographic growth. In addition, substantial advancement has been made in the development of new technology and criteria for the treatment of wastewater. Consequently, Dade County has authorized the joint venture of Greeley and Hansen-Connell Associates, Inc., in collaboration with County staff, to re-evaluate the entire pollution abatement program and prepare a comprehensive program for pollution abatement. The completed report is expected to be submitted on or before November 1, 1972.

Purpose and Scope

The objective of this report is to supplement the existing Master Plan, so that the combined reports can serve for a period of less than one year as an interim metropolitan plan for pollution abatement, with which projects must comply in order to qualify for federal assistance under Public Law 660, and others, as contemplated in the regulations of the Environment Protection Agency published on July 2, 1970, in the "Federal Register" for the Federal

Water Quality Administration, superceded by EPA, until such time that the comprehensive plan for water resources can be completed as defined in 18 CFR 601.33.

This report includes by reference the 1961 Master Plan for Sanitary Sewerage along with supplemental maps and description of changes, updating, and overall shifts and trends in the sewerage concepts and practices.

The Supplement indicates major water pollution control facilities which have been constructed, or are expected to be in the very near future, since the 1961 Master Plan was adopted. It also shows areas which have been sewered since 1961. The number and magnitude of such facilities constructed since 1961 is quite significant.

POPULATION

General

Since World War II, there has been a continuous migration into the Planning Area, which is Metropolitan Dade County, Florida. Preliminary data from the 1970 Census indicate that Dade County is still experiencing one of the highest rates of population growth in the U.S.

Rapid population growth has resulted in accelerated economic growth. Major changes have occurred in land use as new residential, commercial, industrial, public and recreational use patterns have emerged, extensive in area and reflecting a more intensive use of the land. One example of immigrant inflow is the arrival, under Federal sponsorship, of 318,000 persons of Latin birth from Cuba who have become permanent residents since 1960, according to one authority.

These trends have taxed and over-taxed the metropolitan systems for water supply, sewage disposal and surface drainage which have not, in all cases, kept pace with growth. As these trends are likely to persist throughout the coming decades, there is a crucial need for developing a suitable water resources management program and assuring its implementation through a pollution abatement plan, establishment of the necessary legislative-control procedures and revision of the County's master plans for water and sewerage.

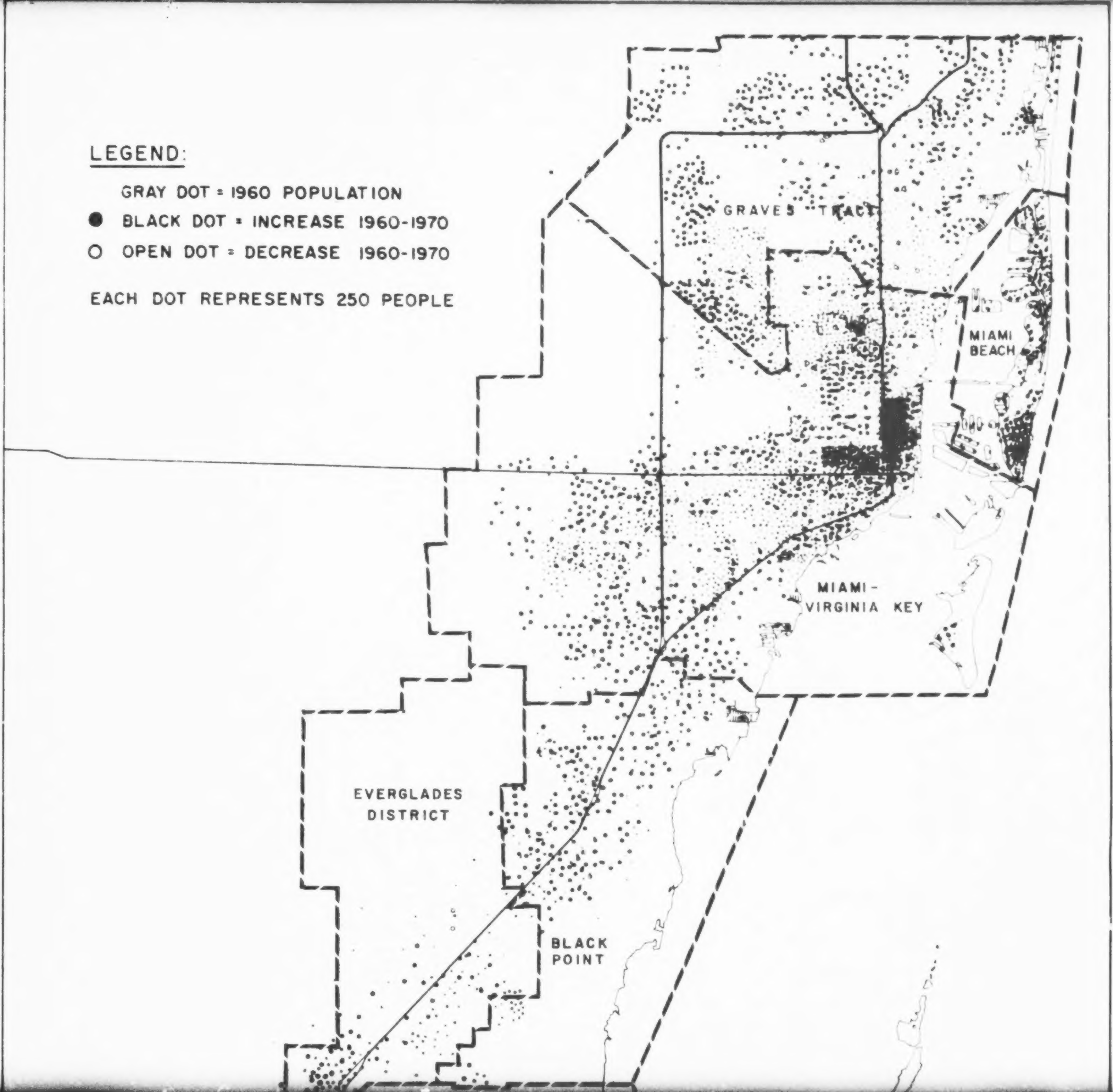
Distribution of Population

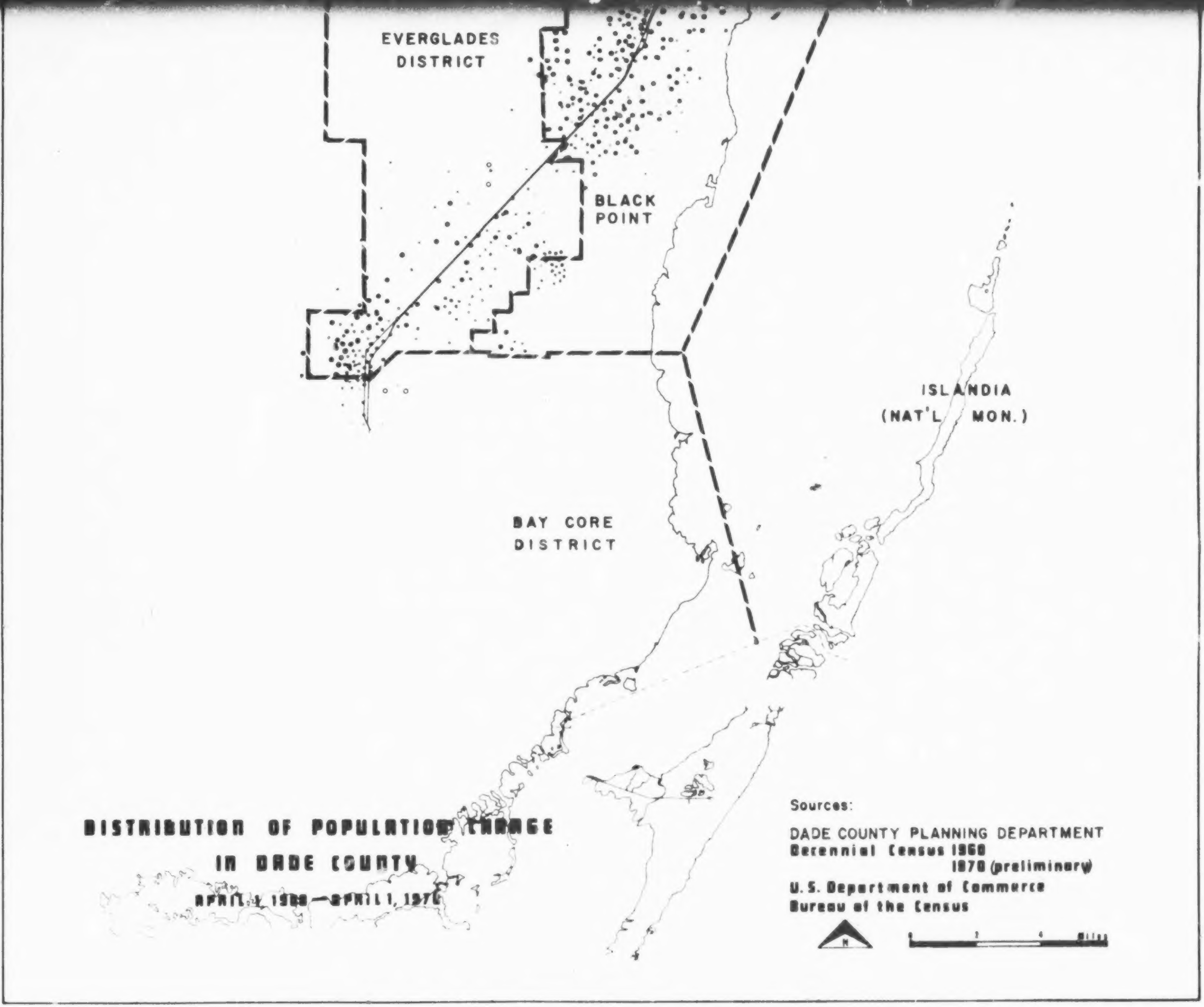
According to preliminary census figures, Dade County's population grew from 935,047 to 1,259,184 during the 1960's. More growth took place in the unincorporated area - but not enough to give it the lead over the cities. According to Paisley the breakdown of growth between cities and unincorporated areas is as follows:

SEWER DISTRICT POPULATION, DADE COUNTY, FLORIDA 1960-70

(From Preliminary 1970 Census Reports)

1961 Plan Sewerage Districts	1960 Population	1970 Population	Increase 1960-70	District 1960-70 % Increase	Distribution of Total 1960-70 Increase	Distribution of Population 1970 % of Total
Graves Tract	260,281	376,659	116,378	46.7	36.0	30.0
Miami Beach	69,711	97,529	27,818	39.9	8.6	7.7
Miami-Virginia Key	544,651	661,814	117,163	21.5	36.2	52.6
Black Point	24,960	70,709	45,749	183.3	14.2	5.6
Everglades	28,663	44,050	15,387	53.7	4.8	3.5
South Bay Core	4,484	4,867	383	8.5	0.1	0.4
Upper Keys		8	8			
No District	2,297	2,949	652	20.4	0.2	0.2
	935,047	1,258,585				


LEGEND:
GRAY DOT = 1960 POPULATION
● BLACK DOT = INCREASE 1960-1970
○ OPEN DOT = DECREASE 1960-1970
EACH DOT REPRESENTS 250 PEOPLE
GRAVES TRACT
MIAMI BEACH
MIAMI-VIRGINIA KEY
EVERGLADES DISTRICT
BLACK POINT



DISTRIBUTION OF POPULATION CHANGE IN DADE COUNTY

APRIL 1, 1960—APRIL 1, 1970

Sources:

DADE COUNTY PLANNING DEPARTMENT
Decennial Census 1960
1970 (preliminary)
U.S. Department of Commerce
Bureau of the Census

METROPOLITAN DADE COUNTY FLORIDA
PROJECT 0340
JANUARY 1971

GREELEY AND HANSEN · CONNELL ASSOCIATES, INC.
CONSULTING ENGINEERS
MIAMI FLORIDA

	1960	1970	Increase
Combined Cities	582,830	723,032	140,202
Unincorporated Areas	352,217	536,152	183,935
Total	935,047	1,259,184	324,137

A great deal of information can be extracted from the following map showing the 1960 population, along with the 1970 population distribution.

Most of the growth is taking place within the urban area as it existed in 1960. This is an absolute reversal of what happened during the 1950's when the great single-family subdivisions got most of the action. Of course, the urban fringe did expand somewhat with the northward spread of Carol City; the development of Country Club of Miami; Palm Springs North; Miami Lakes; Village Green to the west of Snapper Creek; and the subdivisions lining North Kendall Drive; as well as some expansion of Cutler Ridge and South Miami Heights.

Inner-city intensification and filling-in was the result of several distinct forces. The absorption of over 300,000 Latins into greater Miami has had a profound effect. One authority, First Research Corporation of Miami, is quoted in the Miami Herald for January 18, 1971, as finding that 318,000 Latins are now residents of the Metropolitan Area; and about 90 more arrive daily via the Federal "Freedom Flight". The growth shown in the near southwest is primarily due to the influx of Latin refugees except for the high-rises along Biscayne Bay. The growth in the area just north of the Miami River and west of the Civic Center is Latin, as is the concentration in South Hialeah.

Changes resulting from the growth and mobility of the Black community are more difficult to trace. The huge decrease in the Central Negro District brought about by highway interchange development and urban renewal is obvious.

Interestingly, declines can also be seen in the old Black areas of Bunche Park, Liberty City, Coconut Grove, Goulds and Florida City It is therefore accurate to say that population densities in the old Black ghettos have declined over the last ten years - according to preliminary Census figures. Some of these declines may be due to undercounting which may be corrected in the final counts. Once small-area information on such population characteristics as race, income, family size, and age become available, it will be possible to assess the accuracy of overall population figures. While the older Black communities showed declines, the newer areas and those that became integrated showed considerable growth. Examples of areas having growth decline are: the area just northwest of the 36th Street Interchange; Edison Park; the area north of 79th Street and west of I-95; and Carol City.

Finally, we come to the massive inner-city growth brought about by the construction of apartments, condominiums, and high rises. The Beaches Strip attracted a good share of this growth, as did mainland areas along Biscayne Bay. Northeast Dade gained a major concentration from rapid apartment development as did the Dadeland area. Remember that the census only shows growth in "permanent" population. Tourists and part-time residents are not shown at all. A better idea of the increase in part-time residents will be possible once more detailed census information becomes available.

Sewerage Districts

In the 1961 Master Plan for Sanitary Sewerage, major sewer districts were proposed, which were considered as being composed of several smaller systems, as an independent entity, and affording the greatest over-all economy consistent with flexibility in the program of construction to meet the anticipated growth in each district.

These major sewerage districts are shown on Plate A.

The preliminary 1970 census figures were also studied to find the population increase in the several sewerage districts of the 1961 report. A summary of this information is presented on Page 11. The Graves Tract and Miami-Virginia Key Districts accounted for 72.2% of the total 1960-70 population increase. The other significant growth areas were the Black Point District with 14.2%, Miami Beach District 8.6% and the Everglades District with 4.8%.

COUNTY POLICY FOR POLLUTION ABATEMENT

As late as June 2, 1970, the County Commission reconfirmed its position toward the hazard of septic tanks. In official action on that date, the Commission adopted the following:

> " The Board of County Commissioners finds that the proliferation of septic tanks in Dade County is a menace to the health and safety of the people of Dade County in that septic tanks are insufficient in the treatment of waste matter and threaten the water supply of Dade County. It is the intent of the Board of County Commissioners to eliminate over a reasonable period of time the use of septic tanks in Dade County". *

The Commission acknowledges that water pollution is excessive in Dade County and that there is need for creation and implementation of an effective pollution abatement program. This realization and the determination to take remedial action was given considerable impetus by the Federal-State Dade County Enforcement Conference, October 20-22, 1970.

The County Commission on November 17, 1970, passed Resolution R-1390-70, authorizing Greeley and Hansen-Connell Associates in collaboration with County personnel, to prepare the following:

1. An Action Plan for compliance with the "Conclusions and Recommendations of the Federal-State Conferees, Dade County Enforcement Conference", to be submitted on or before February 1, 1971. The Action Plan was adopted by the Board of County Commissioners on January 26, 1971.

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* Excerpt from Section 24-13, Ordinance 70-44.

2. An application for federal assistance under the Federal Water Quality Act toward funding a metropolitan pollution abatement plan, as defined in 18 CFR 601.33, to be submitted about February 1, 1971.
3. An "interim" metropolitan pollution abatement plan, with five-year construction-priority and financial plan, to be submitted on or before November 1, 1971.
4. The "complete" metropolitan pollution abatement plan for a 30-year study period, including separate but complementary master plans for water supply and water pollution abatement, to be submitted on or before November 1, 1972.

The Public Works Department, the Air and Water Pollution Control Department, the Planning, Building and Zoning and Legal Departments, with the Manager's Office, will collaborate with the County's consultants to prepare the pollution abatement plan. Assistance will also be asked of several state and federal agencies.

The preliminary schedule for the events and actions required to finish the Interim Plan and the complete plan, with the CPM network for coordination of the necessary input from all the local, state and federal agencies to be involved and responsible are shown on Plates F and G.

SEWAGE TREATMENT PLANTS

Of the 26 treatment plants which discharged to inland canals in 1961, only 13 continue to do so. During the decade of expansion and growth since 1960, other plants have been built so that at the end of 1970, 44 plants in all discharge to inland canals. Projects now underway will permit retirement of 9 of these, removing from the inland waters total flow of 16.8 MGD. At that point, discharge of treated sewage to inland canals will be in the order of about 13.1 MGD, or less than 10% of all system flows in Dade County.

Summary of Plant Capacities

	As of 1961		Present	
Discharge	No. Plants	Capacity, MGD	No. Plants	Capacity, MGD
To Ground Water	6	0.68	30	1.55
To Canals	26	23.8	44	29.9
Removal Planned			(-) 9 **	(-) 16.8 **
After Removal			35 **	13.1 **
To Ocean	2 *	87.0	8 *	122.5
Other	9	1.32	7	1.08
Total	43	112.3	89	155.03

* Includes Miami Beach Outfall at 22 MGD actual flow, but with capacity of 40 MGD, without treatment.

** Not included in Totals.

Existing Sewage Treatment Plants and Existing Sewered Areas of the various certificated utilities, are shown on Plate B.

MAJOR PROJECTS CONSTRUCTED SINCE 1961 MASTER PLAN

Numerous new sewerage projects, as well as major expansions of existing systems, have been undertaken in Dade County since the completion of the 1961 Master Sewerage Plan. The projects include transmission mains, major treatment facilities, and ocean outfalls either constructed, under construction, or proposed in the various sewer districts, as shown on Plates C, D, and E of this report.

The districts designated in the 1961 Master Plan as South Core District and Upper Keys (Islandia) District have remained essentially unchanged during the Sixties. The South Bay Core is basically undeveloped and considered to be a marginal development area until the latter part of this century or early 2000's. The undeveloped area originally planned as the Upper Keys District is being purchased by the Federal Government as a future National Monument and presumably will remain as wilderness.

A comparison of the 1960 area served in individual sewerage districts with the comparable areas presently served is shown in the following table:

1961 Plan Sewerage District	Total Area	Area Sewered as of 1960	Area Sewered as of 1970	Area Now Sewered	Increase in Area Served 1960-1970
Graves Tract	68,000 Ac.	9,000 Ac.	26,000 Ac.	38%	189%
Miami Beach	6,000 "	6,000 "	6,000 "	100%	0%
Miami-Virginia Key	119,000 "	18,000 "	35,000 "	29%	94%
Black Point	42,000 "	5,000 "	9,000 "	21%	80%
Everglades	50,000 "	2,000 "	4,000 "	8%	100%
TOTAL	285,000 Ac.	40,000 Ac.	80,000 Ac.	28%	100%

Graves Tract District:

The Graves Tract Sewerage District includes some ten new major sewerage projects as shown on Plate C. These projects include pressure and gravity sewers, pumping stations, treatment plants and ocean outfalls.

Project A - The Northeast Dade County Ocean Outfall, Transmission Main, and Treatment Plant proposed by Metropolitan Dade County, for which an application for PL 660 funds has been filed but will be deferred to Fiscal 1972. This project is expected to begin construction in 1973 and will include a 54-inch sewage transmission line extending from the Snake Creek Canal, also known as the Royal Glades Canal, at 183rd Street and N.E. 10th Avenue along 183rd Street to a treatment plant site on 191st Street, about 4,000 feet east of Biscayne Boulevard. This will be a pressure main, receiving sewage pumped from Dade County's N.E. sewage collection system, the County's 30-inch Sky-Lake Force Main (under construction), as well as from pumping stations proposed for construction by the City of North Miami Beach, from proposed and existing developments in the area, and from the privately owned Golden Isles Utility and Andover Plants.

Subsequent extensions of the main westward to N.W. 77th Avenue will permit retirement of several other plants and will provide sewage disposal for a total area of about 40 square miles in northern Dade County. The project will provide relief for the North Dade Sewage Transmission system, an extension of the North Miami Ocean Outfall.

The proposed treatment facilities will provide secondary treatment, to conform with General Law 80-72 of the Florida statutes, and will include an outfall pumping station.

The proposed Northeast outfall will extend from the outfall pumping station across the IntraCoastal Waterway to Golden Beach in 194th Street and will extend to a depth of 90 feet at the edge of the escarpment of the Floridan Plateau about 10,000 feet from shore.

Project B - The City of North Miami constructed the North Miami Outfall, transmission system, and treatment plants during the mid-sixties. The City's outfall serves the County's North Dade Transmission System, Sky Lake Project, City of North Miami, Interama, and Sunny Isles. The project consisted of 8 miles of 48 inch pipe (including some 9,500 lineal feet of ocean outfall, the skimming plant, and the conversion of the City's existing secondary treatment plant to a skimming plant. Ultimate outfall capacity at peak rates is estimated to be 53 million gallons per day (MGD). When future flows exceed system capacity, relief will be provided by cross connection to the Northeast Dade Outfall as described in Project A above.

Project C - The Sunny Isles Interceptor and Sewage Treatment Plant were constructed in 1968 by Metropolitan Dade County. The project includes a collector-interceptor system serving about 700 acres between the IntraCoastal Waterway and the Atlantic Ocean in extreme N.E. Dade County. This is the tourist area known as Motel Row and has an estimated 7,000 motel rooms. There are few permanent residents, but high rise apartments are appearing in the area.

The System was financed with a $1.2 million revenue bond issue and a federal grant of $319,400. There were no front foot assessments or connection charges in this project, inasmuch as the revenue bond issue will be wholly reimbursed by the monthly service charge.

This sewer program also provided a means for the construction of the Sunny Isles Shores Sewer System which was constructed and completed in 1969 at a cost of approximately $165,000.00 advanced from the County's Water and Sewer Revolving Fund, to be repaid in six (6) years through payout of assessments imposed through a special taxing district created for this 34-acre tract. The Sunny Isles System [illegible] allowed construction of a $400,000.00 sewage collection system for a residential area known as Golden Shores. This too was financed from the Revolving Fund with a front foot assessment to be imposed upon its completion, to repay the cost of the system. These repayments will replenish the Revolving Fund and permit new projects to proceed.

Project D - Sewerage facilities for the Interama project were constructed by the City of North Miami for the State of Florida to serve an estimated fifteen million persons per year for the Inter-American Cultural Trade Center. The project is in the Northeast portion of Dade County, south of State Road 826 and between Biscayne Boulevard and the Intracoastal Waterway. The project consists of 5.5 miles of pipe varying from 6 to 24 inches in diameter, 4 pumping stations and a sewage treatment plant. The plant is the skimming type and is connected to the City of North Miami's Ocean Outfall system. The sewerage system is complete, though construction of the trade center has lagged and is not yet active.

Project E - The Sky Lake project was constructed by Metropolitan Dade County to serve a large development in Northeast Dade County. The project consists of approximately 3.5 miles of pressure sewer constructed generally along the Snake Creek Canal to the City of North Miami Pretreatment Plant. Financing was prepaid in full by the developer.

Project F - The North Dade Sanitary Sewage Transmission Main and Sewage Treatment Plant project was placed in operation by Metropolitan Dade County December 1970. The project consists of 5.5 miles of pressure sewer ranging from 16 up to 48 inches in diameter, a pumping station, and a treatment plant. The pumping station is located adjacent to the City of Hialeah, and the treatment plant and outfall pumping station are located in the City of Opa Locka. The first phase treatment plant is a 11.5 MGD skimming plant with transmission mains to the North Miami Ocean outfall. Plans are currently being completed to upgrade the plant to provide primary treatment. By 1974 the plant will be expanded to a 26 MGD secondary treatment plant.

The system will serve the cities of Opa Locka and Hialeah and will allow elimination of the following sewage treatment plants: Opa Locka Airport, Myrtle Grove, Carol City, Seaboard Industrial Park and Miami Lakes as well as several smaller plants.

Project G - In 1970 the City of Hialeah constructed a sewage collection system to serve the western half of the City. The project consists of a gravity collection system, pumping stations, and interceptors. The area was originally programmed in the 1961 Master Plan to utilize the treatment facilities of the Miami-Virginia Key District but construction of the County's North Dade Transmission Sewer made economical disposal facilities via the North Miami Ocean Outfall immediately available. The sewage is treated at the County's North Dade Treatment Plant in Opa Locka, and the effluent is disposed to the ocean via the City of North Miami outfall.

Project H - During 1969, Metropolitan Dade County began planning a sewage transmission line known as the Myrtle Grove-Carol City Project. This project consists of approximately 4 miles of 36-inch pressure sewer and will connect the Myrtle Grove and Carol City sewage treatment plants to the North Dade Sewage Treatment Plant. This will permit the phasing out of the Carol City and Myrtle Grove plants as well as Dade County's Opa Locka Airport, thus eliminating three plants which discharge into inland canals. Completion is scheduled for November 1971.

Project I - The Florida Memorial College Transmission Sewer Project was constructed in 1968 by Metropolitan Dade County. This project consists of pumping stations and pressure sewers serving an industrial park, a school and the Florida Memorial College. Treatment will initially be at the Opa Locka Airport Sewage Treatment Plant which will soon be abandoned and connected to the County's Myrtle Grove - Carol City Transmission Main.

Project J - Miami Lakes Utility Company is currently planning a project known as Miami Lakes Transmission Sewer. The project will consist of approximately 1.1 miles of 30 inch pipe and will eliminate an existing sewage treatment plant treating waste from a large subdivision and discharging effluent to a canal. Waste treatment will be provided at the County's North Dade Treatment Plant, with the effluent discharged via North Miami's Ocean Outfall.

Project K - The North Bay Village Sewer Project was constructed in the late Sixties by the Town of North Bay Village. The project consists of a main to the City of Miami Beach which resulted in the elimination of a sewage treatment plant which discharged into Biscayne Bay.

Miami Beach District:

The Miami Beach District has had one major project constructed during the Sixties as shown on Plate C. The City of Miami Beach has constructed several large sewers during the Sixties to provide service to the dense island population as well as a major extension of its ocean outfall. Since the projects were generally for augmenting the City's existing system rather than serving new areas, no attempt has been made in this report to outline the systems. The City extended its raw sewage outfall beyond the outer reef in 1969 - 70; but as yet has no treatment facility.

Miami-Virginia Key District

Several major projects have been completed or are under design in the Miami-Virginia Key Sewerage District. The major projects are shown in schematic form on Plate D.

Project A - Dade County has substantially completed construction of a water and sewer program for the Model Cities project. This project is a federally-sponsored program, located in the north central portion of Dade County. Approximately $6.1 million of contracts have been let for water and sewer systems in the Brownsville and the Northwest Transition areas. These systems will be completed in 1971 and additional extensions are planned. Secondary treatment will be provided at the City of Miami-Virginia Key Plant and chlorinated effluent will be disposed via the existing ocean outfall.

Project B - The City of Miami Springs and the City of Miami have cooperated to construct the Miami Springs Transmission Sewer. This project consists of approximately 3 miles of 30-inch pressure sewer from the City of Miami Springs, located in central Dade County to the City of Miami-West Dade Interceptor. It intercepted the Miami International Airport Transmission System permitting retirement of treatment plants at the Airport. Treatment and effluent disposal will be at the City of Miami's Virginia Key Plant and ocean outfall, respectively. Construction of sewage collection facilities in Miami Springs is currently delayed by taxpayer litigation.

Project C - The Dade County Port Authority constructed the Miami International Airport Transmission System in the early Sixties. This project consists of several large pumping stations, industrial waste pretreatment plants, and approximately 8.5 miles of pressure sewer ranging from 12 to 20 inches in diameter. The project serves the Miami International Airport terminal and maintenance facilities, two adjacent industrial parks, and a wholesale merchandising center. This system resulted in the abandonment of three sewage treatment plants by diverting the flows to the Virginia Key Plant with effluent disposal to the ocean. (These abandoned plants were erroneously reported in the FWQA Enforcement Conference of October 1970 as sources of pollution.)

Project D - The West Dade Transmission Main project was started in 1969 as a joint venture of the City of Miami and Metropolitan Dade County. The project consists of approximately 20 miles of pressure sewer ranging from 12 through 54 inches in diameter and will ultimately provide service for the southwestern part of the City of Miami and approximately 20,000 additional acres of West Dade County. There will be some 50 MGD of waste flow. Secondary treatment will be provided at the City of Miami's

Virginia Key Sewage Treatment Plant. Major sewage treatment plants currently discharging effluent to local canals, but soon to be eliminated by this project, are: Westwood Lake, Southland Utility, and Community Utilities plants.

Project E - The Community Utilities Corporation Transmission Sewer Project is proposed by the General Waterworks Corporation. The project will consist of 1.3 miles of 24-inch pressure main to connect to the County's West Dade Transmission Main for eventual treatment at Miami's Virginia Key plant. This project will eliminate a 2.1 MGD sewage treatment discharging about 3 MGD of effluent into a west Dade County canal.

Project F - The Coral Gables Sewer Project is currently under design by the City of Coral Gables. The project includes additions to the pressure sewer system now connecting the South Miami and Coral Gables systems to the Miami system. The project will also provide sewage collection and disposal for the balance of the City, with construction cost estimated to be $12,000,000. A referendum is scheduled in March 1971 to authorize the proposed bond issue. Construction should begin by November 1971.

Project G - The Tri-Cities project was constructed during the late Sixties as a joint effort by the City of Miami, City of South Miami, and the City of Coral Gables. The system consists of 4.7 miles of transmission sewers connecting sewerage facilities of South Miami and Coral Gables with the City of Miami's existing interceptor sewer system. This project led to the abandonment of a 2.5 MGD sewage treatment plant located on the Coral Gables Waterway at US Highway 1 and allowed South Miami to avoid construction of a plant. Treatment is now provided at Miami's Virginia Key plant.

Project H - Dade County constructed the Dodge Island Project which consists of a pumping system to serve the seaport of Miami. The project consists of approximately 3 miles of 8 inch diameter pressure sewer connecting to the City of Miami Interceptor system for treatment at its Virginia Key Secondary treatment plant.

Project I - The Key Biscayne Transmission Sewer project was constructed by General Waterworks Corporation. The project contains 6 miles of 12 inch pressure sewer connecting Key Biscayne to the Virginia Key plant. This eliminated the Key Biscayne sewage treatment plant which discharged into Biscayne Bay. This system is at peak capacity as of 1971.

Project J - The Peninsula Utilities Corporation experimental disposal well is being constructed by General Waterworks Corporation. This project recently completed and now being tested, consists of a deep injection well for disposal of treated sewage effluent from the Peninsula sewage treatment plant located on the Snapper Creek canal in southwest Dade County. Discharge is to the "Boulder Zone" of the lower zones of the Floridan Aquifer of the eocene age.

Black Point District:

Two major sewerage facilities have been constructed in the Black Point Sewerage district during the Sixties. These projects are the Goulds-Perrine Transmission Mains and Sewage Treatment Plant and the Florida Water and Utilities Company's Transmission Mains. Both projects are shown on Plate E.

Project A - The Goulds-Perrine Sewage Treatment Plant and Transmission Mains project were constructed by Metropolitan Dade County. The project, now nearing completion, consists of a 2-MGD tertiary sewage treatment plant which may ultimately be expanded to a 8 MGD plant on an interim basis, until a permanent area wide plant can be constructed. A transmission system consisting of 3.5 miles of pressure sewer ranging from 16 through 24 inches in diameter have been constructed to serve residents of the Neighborhood Development Program Areas of Goulds and Perrine, Florida and the surrounding environs. The ultimate service area will serve an estimated population of 97,000 persons by 1985. The plant will provide tertiary treatment with discharge of filtered, de-phosphatized effluent to Black Creek Canal.

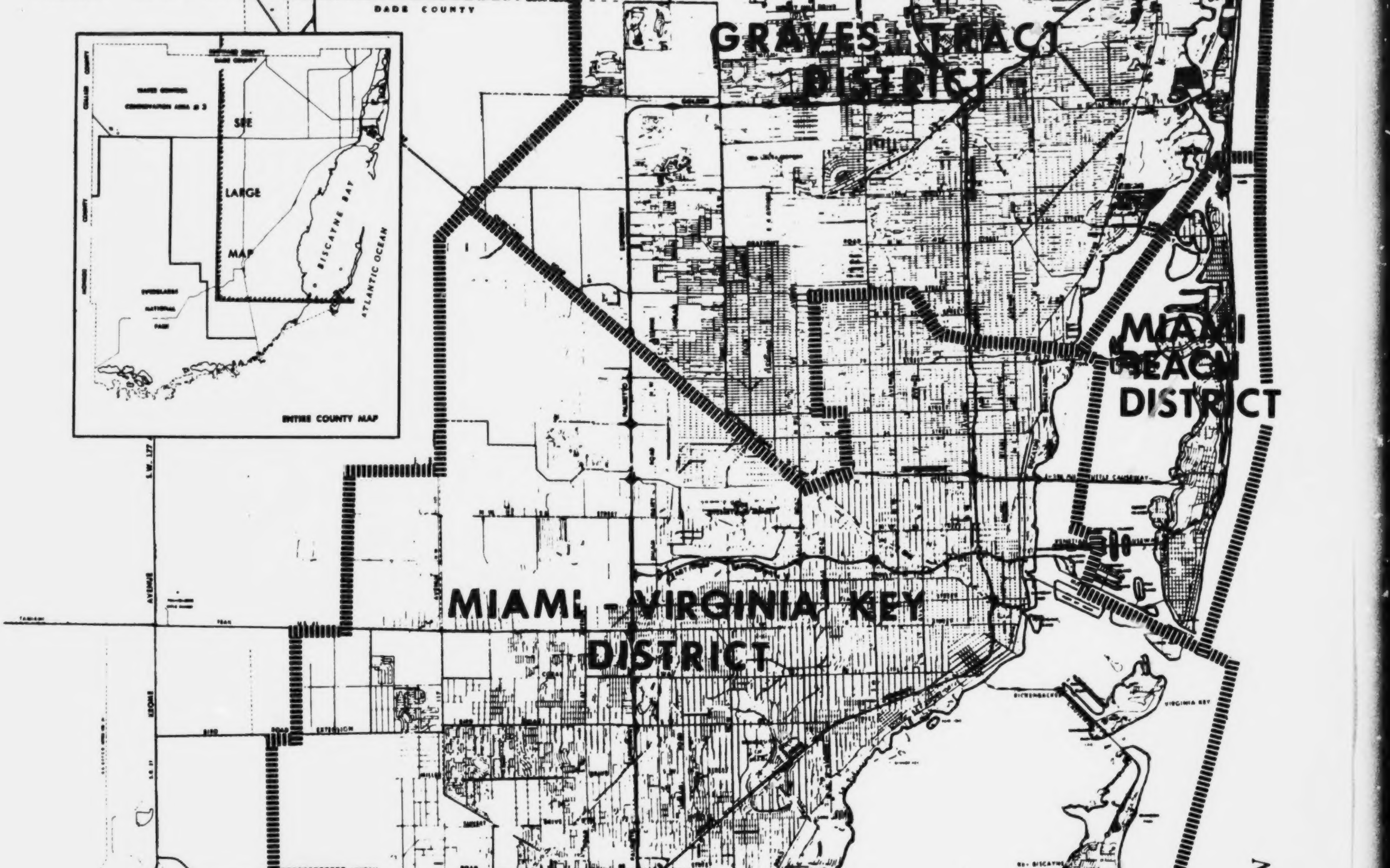
Project B - The Florida Water and Utilities Transmission Main project was constructed by Florida Water and Utilities Company. The project consisted of approximately 5 miles of 10-and 12-inch diameter pressure sewers to provide sewerage service to the fast growing South Dade suburbia along U.S. Highway #1. Treatment facilities are at the owner's Cutler Ridge Subdivision Plant with effluent disposal to the Black Creek Canal.

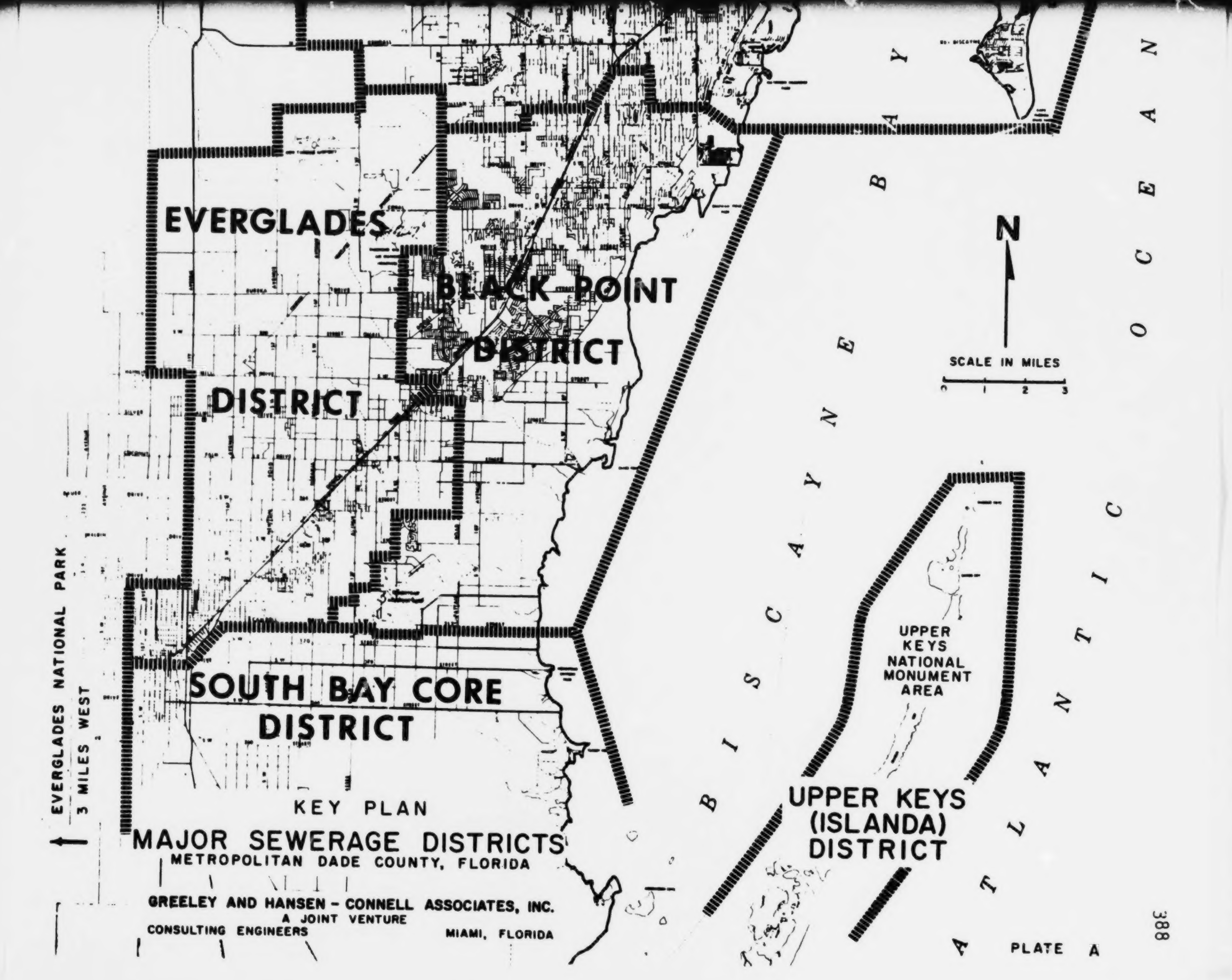
Everglades District:

The only major sewerage facility constructed in the Everglades Sewerage District was an expansion and upgrading of treatment at the Homestead City Sewage Treatment Plant. See Plate E.

Project F - The Homestead City Sewage Treatment Plant project was constructed by the City of Homestead. The project involved addition to the existing 0.6 MGD high-rate trickling filter plant of a new 0.75 contact stabilization plant. Effluent is discharged to acanal connecting to Biscayne Bay.

JANUARY, 1971
PROJECT 0340



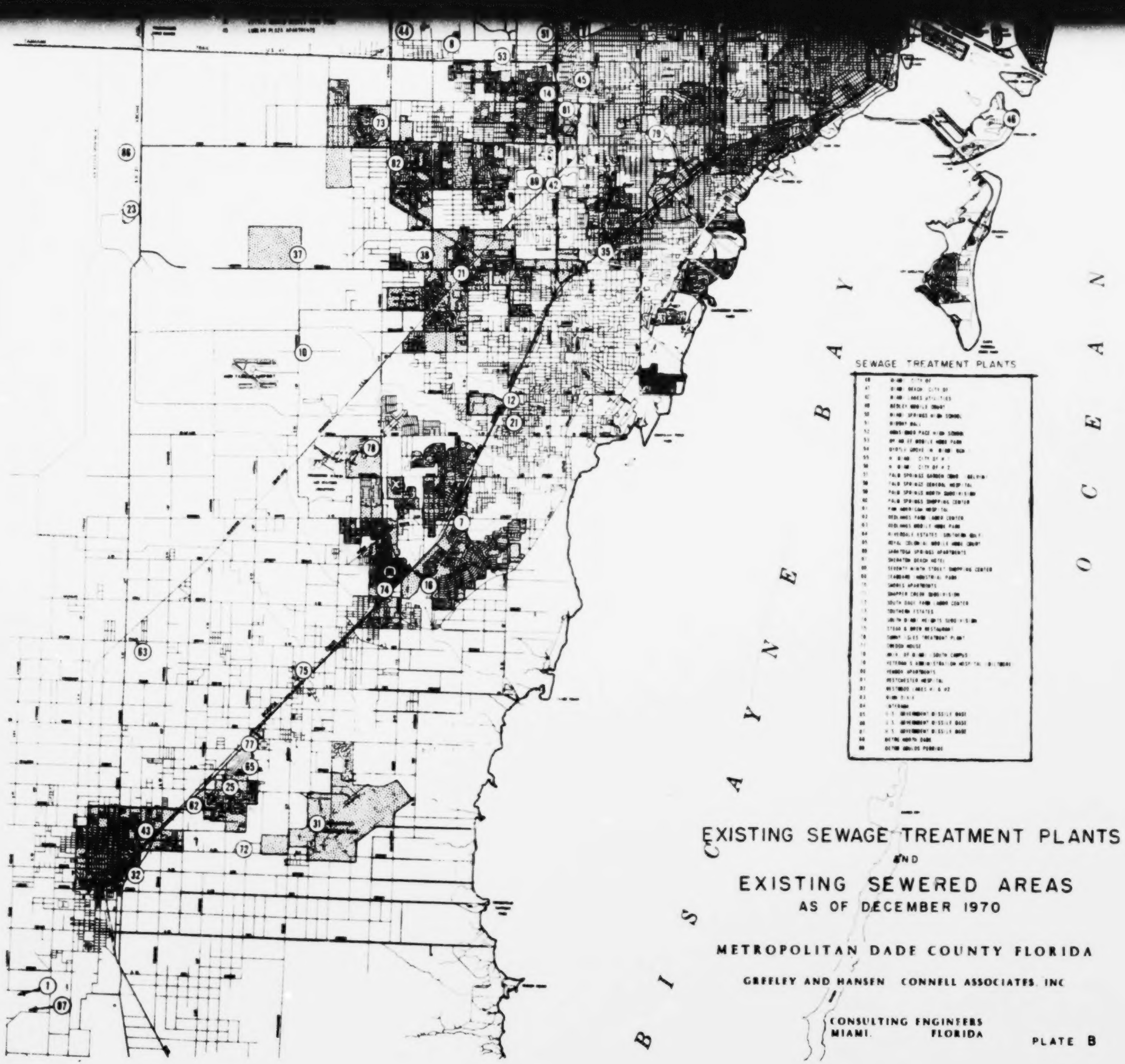


KEY PLAN

MAJOR SEWERAGE DISTRICTS
METROPOLITAN DADE COUNTY, FLORIDA

GREELEY AND HANSEN - CONNELL ASSOCIATES, INC.
A JOINT VENTURE
CONSULTING ENGINEERS
MIAMI, FLORIDA

PLATE A



EXISTING SEWAGE TREATMENT PLANTS
AND
EXISTING SEWERED AREAS
AS OF DECEMBER 1970

METROPOLITAN DADE COUNTY FLORIDA

GREELEY AND HANSEN CONNELL ASSOCIATES, INC

CONSULTING ENGINEERS
MIAMI, FLORIDA

PLATE B

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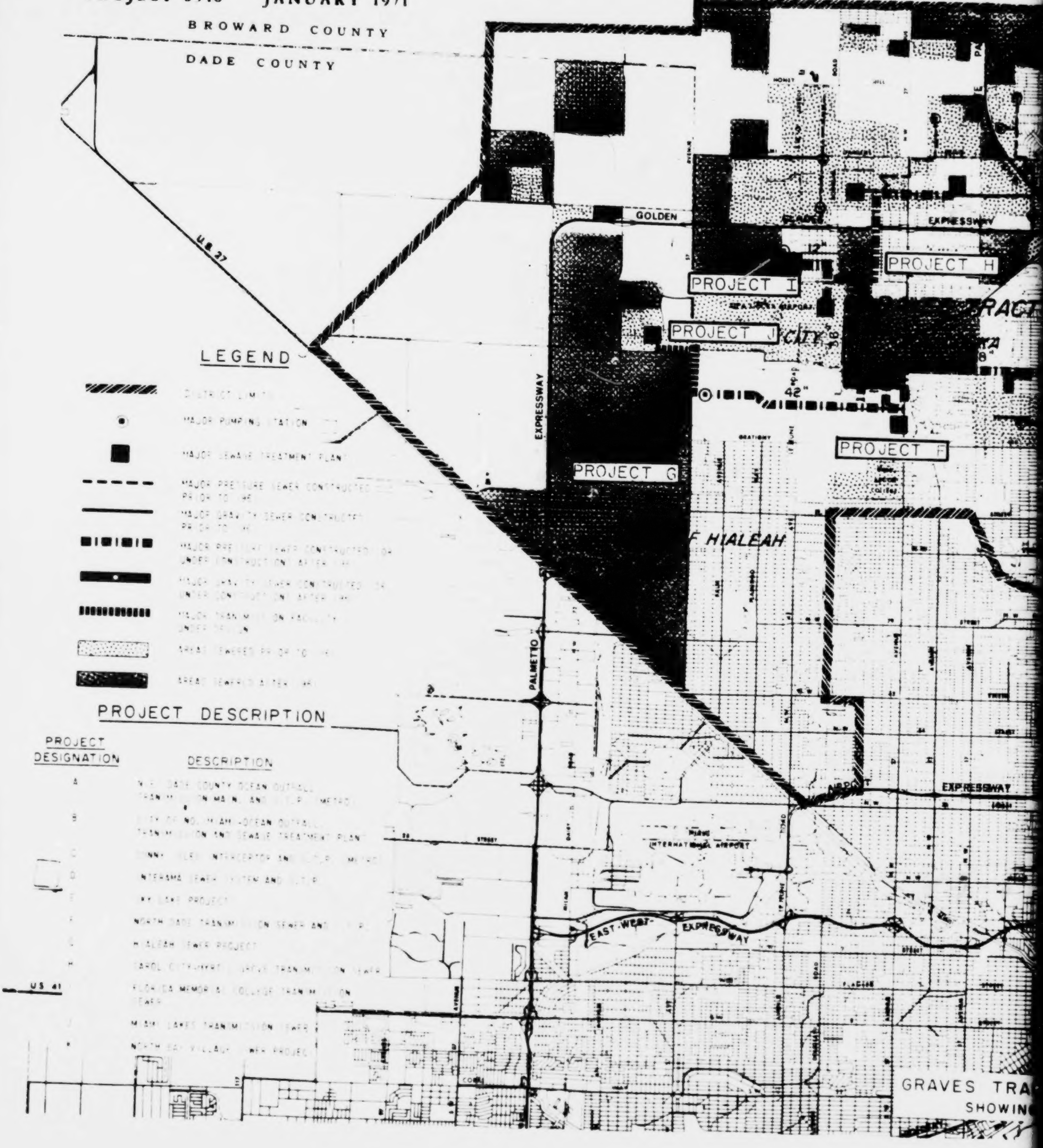
METROPOLITAN DADE COUNTY FLORIDA

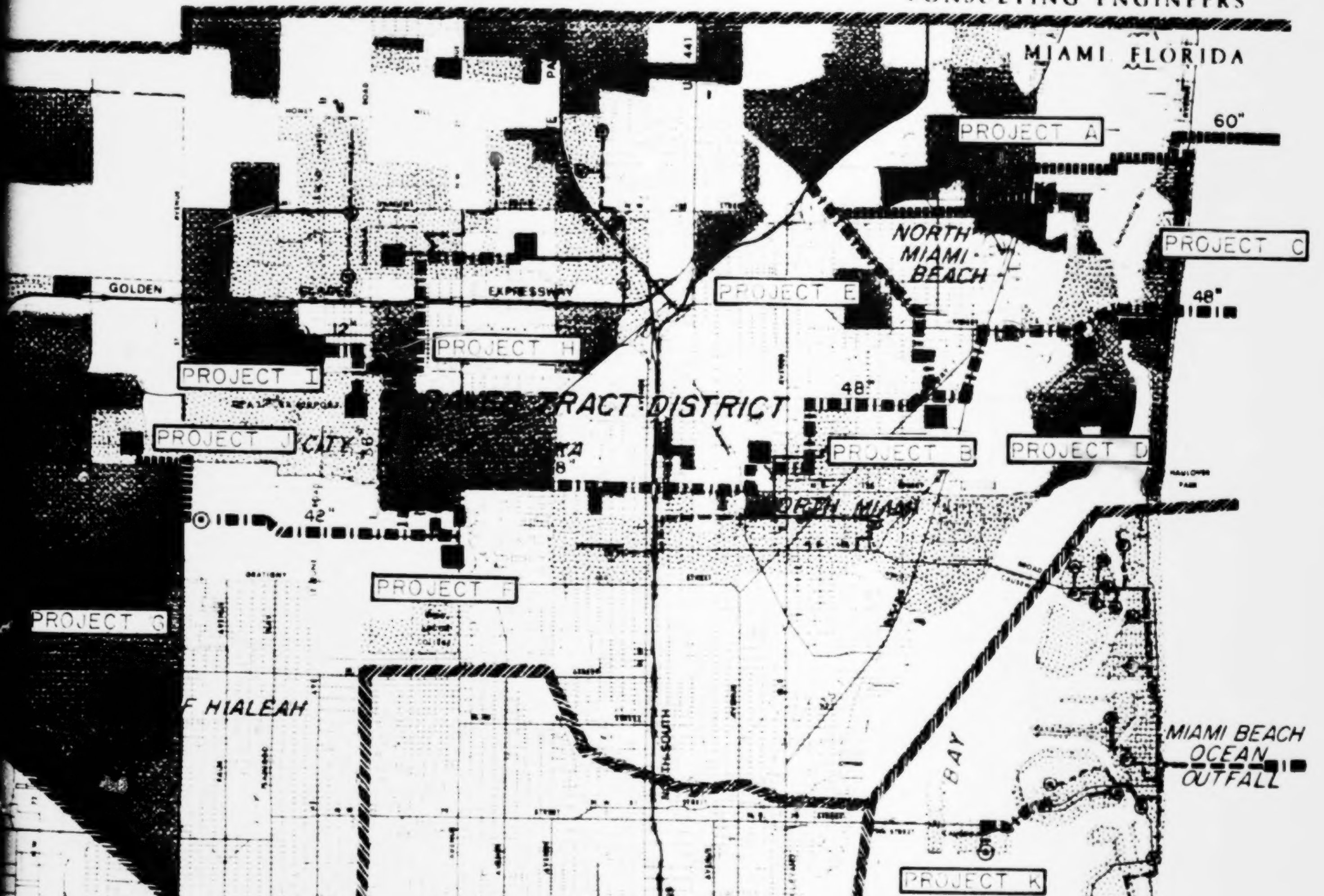
GREELEY

PROJECT 0340 JANUARY 1971


BROWARD COUNTY
DADE COUNTY
U.S. 27
GOLDEN
EXPRESSWAY
12"
PROJECT H
PROJECT I
PROJECT J
CITY
36"
42"
PROJECT F
PROJECT G
EXPRESSWAY
HIALEAH
PALMETTO
AIRPORT
EXPRESSWAY
INTERNATIONAL AIRPORT
EAST-WEST EXPRESSWAY
US 41
GRAVES TRA
SHOWIN
LEGEND
DISTRICT LIMITS
MAJOR PUMPING STATION
MAJOR SEWAGE TREATMENT PLANT
MAJOR PRESSURE SEWER CONSTRUCTED PRIOR TO
MAJOR GRAVITY SEWER CONSTRUCTED PRIOR TO
MAJOR PRESSURE SEWER CONSTRUCTED (OR UNDER CONSTRUCTION) AFTER
MAJOR GRAVITY SEWER CONSTRUCTED (OR UNDER CONSTRUCTION) AFTER
MAJOR TRANSMISSION FACILITY UNDER DESIGN
AREAS SEWERED PRIOR TO
AREAS SEWERED AFTER
PROJECT DESCRIPTION
PROJECT DESIGNATION
DESCRIPTION
A N.E. DADE COUNTY OCEAN OUTFALL TRANSMISSION MAIN, AND S.T.P. (METRO)
B CITY OF NO. MIAMI-OCEAN OUTFALL, TRANSMISSION AND SEWAGE TREATMENT PLANT
C SUNNY ISLES INTERCEPTOR AND S.T.P. (METRO)
D INTERAMA SEWER SYSTEM AND S.T.P.
E LAKE PROJECT
F NORTH DADE TRANSMISSION SEWER AND S.T.P.
G HIALEAH SEWER PROJECT
H CAROL CITY-MYRTLE GROVE TRANSMISSION SEWER
FLORIDA MEMORIAL COLLEGE TRANSMISSION SEWER
MIAMI LAKES TRANSMISSION SEWER
NORTH BAY VILLAGE SEWER PROJECT

Y FLORIDA

GREELEY AND HANSEN · CONNELL ASSOCIATES, INC
CONSULTING ENGINEERS
MIAMI, FLORIDA

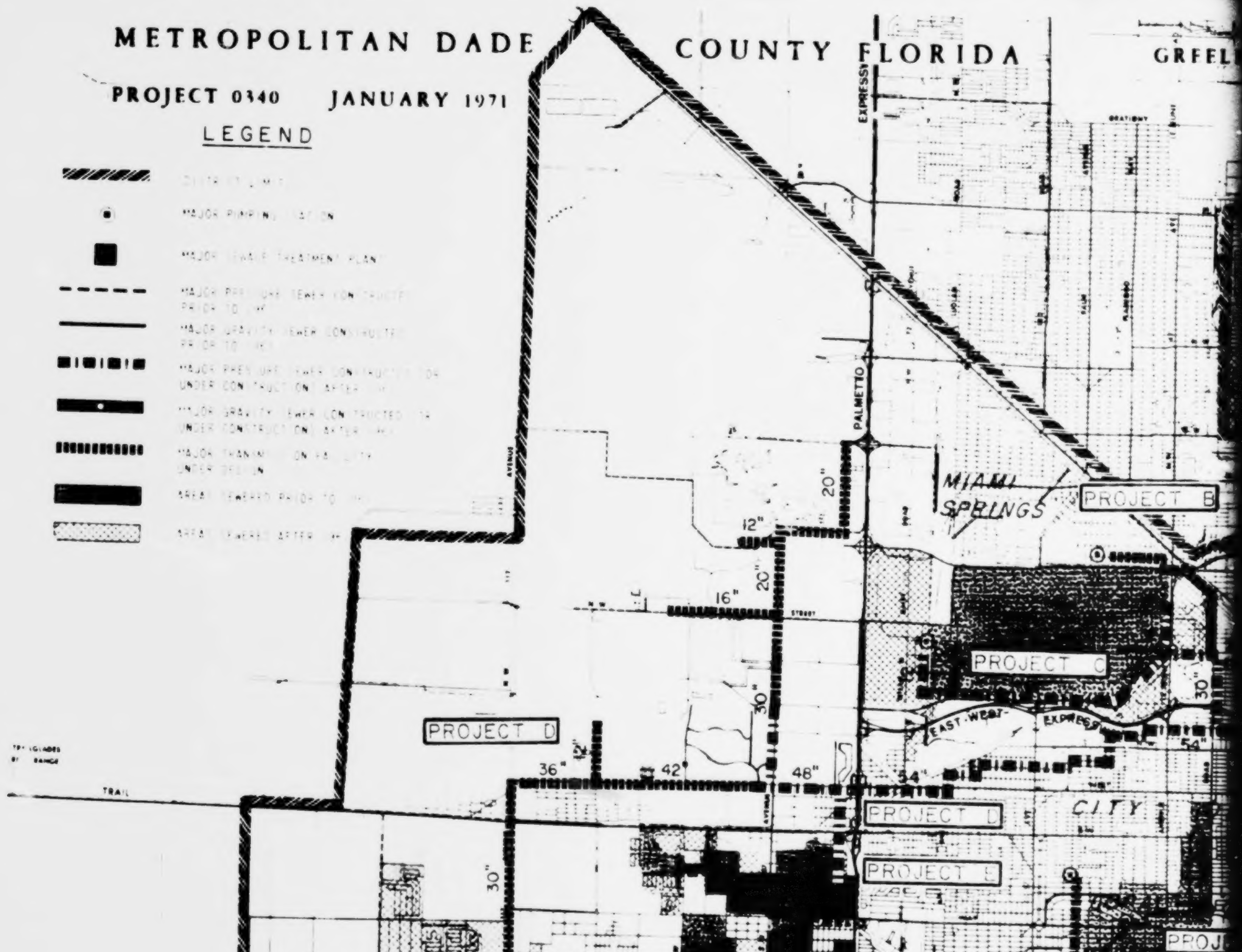


GRAVES TRACT AND MIAMI BEACH DISTRICTS
SHOWING 1970 MAJOR FACILITIES

PLATE C

METROPOLITAN DADE COUNTY FLORIDA

PROJECT 0340 JANUARY 1971


LEGEND
DISTRICT LIMITS
MAJOR PUMPING STATION
MAJOR SEWAGE TREATMENT PLANT
MAJOR PRESSURE SEWER CONSTRUCTED PRIOR TO [illegible]
MAJOR GRAVITY SEWER CONSTRUCTED PRIOR TO [illegible]
MAJOR PRESSURE SEWER CONSTRUCTED (OR UNDER CONSTRUCTION) AFTER [illegible]
MAJOR GRAVITY SEWER CONSTRUCTED (OR UNDER CONSTRUCTION) AFTER [illegible]
MAJOR TRANSMISSION FACILITY UNDER DESIGN
AREAS SEWERED PRIOR TO [illegible]
AREAS SEWERED AFTER [illegible]
GREEL
EXPRESSWAY
PALMETTO
MIAMI SPRINGS
PROJECT B
PROJECT C
PROJECT D
PROJECT D
PROJECT E
PROJECT G
PROJECT J
PROJ
PROJEC
EAST-WEST EXPRESSWAY
CITY
SOUTH MIAMI
TRAIL
KENDALL
20"
12"
20"
16"
30"
36"
42"
48"
54"
54"
30"
30"
24"
12"

391

OUNTY FLORIDA

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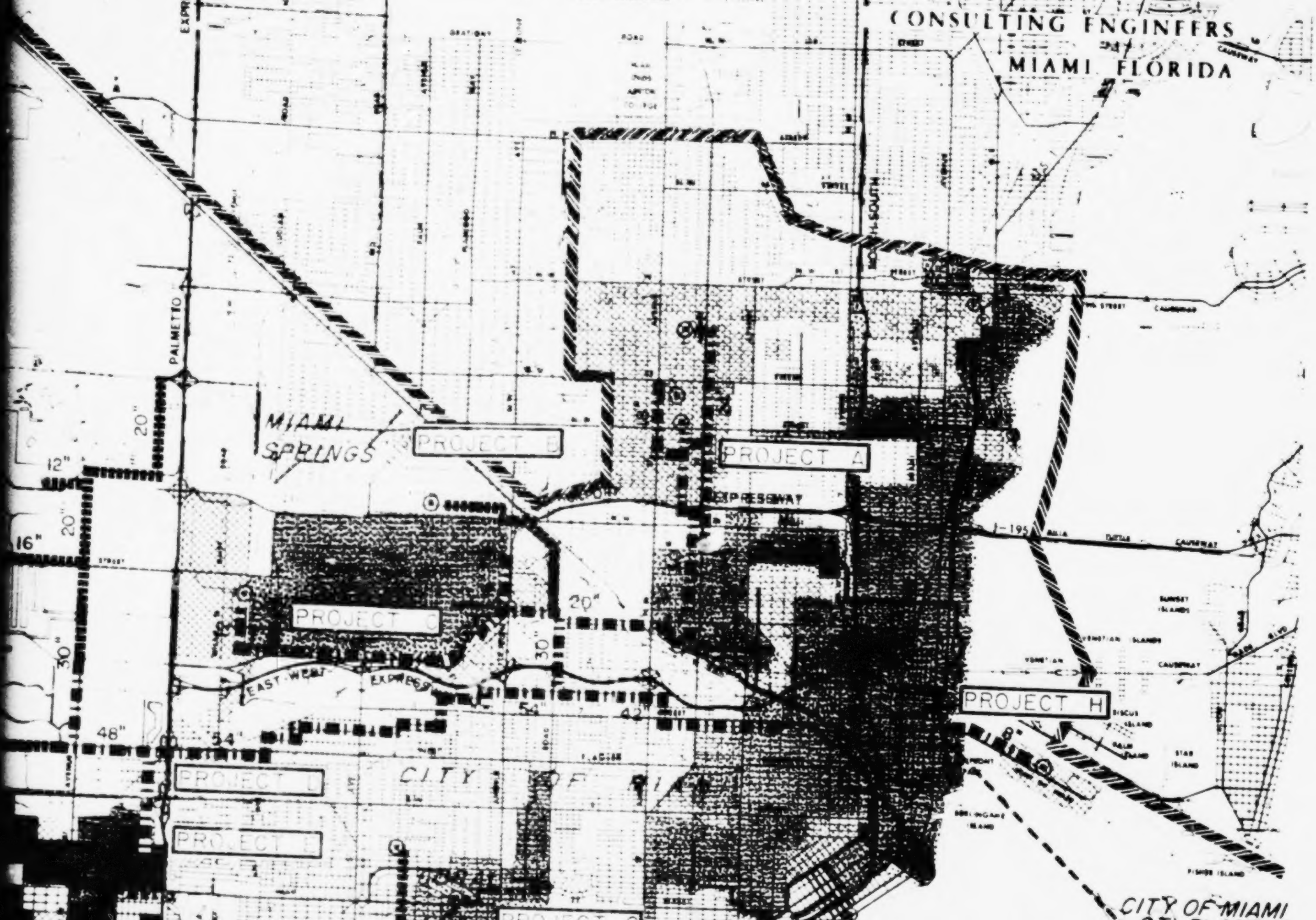
CONSULTING ENGINEERS
MIAMI, FLORIDA



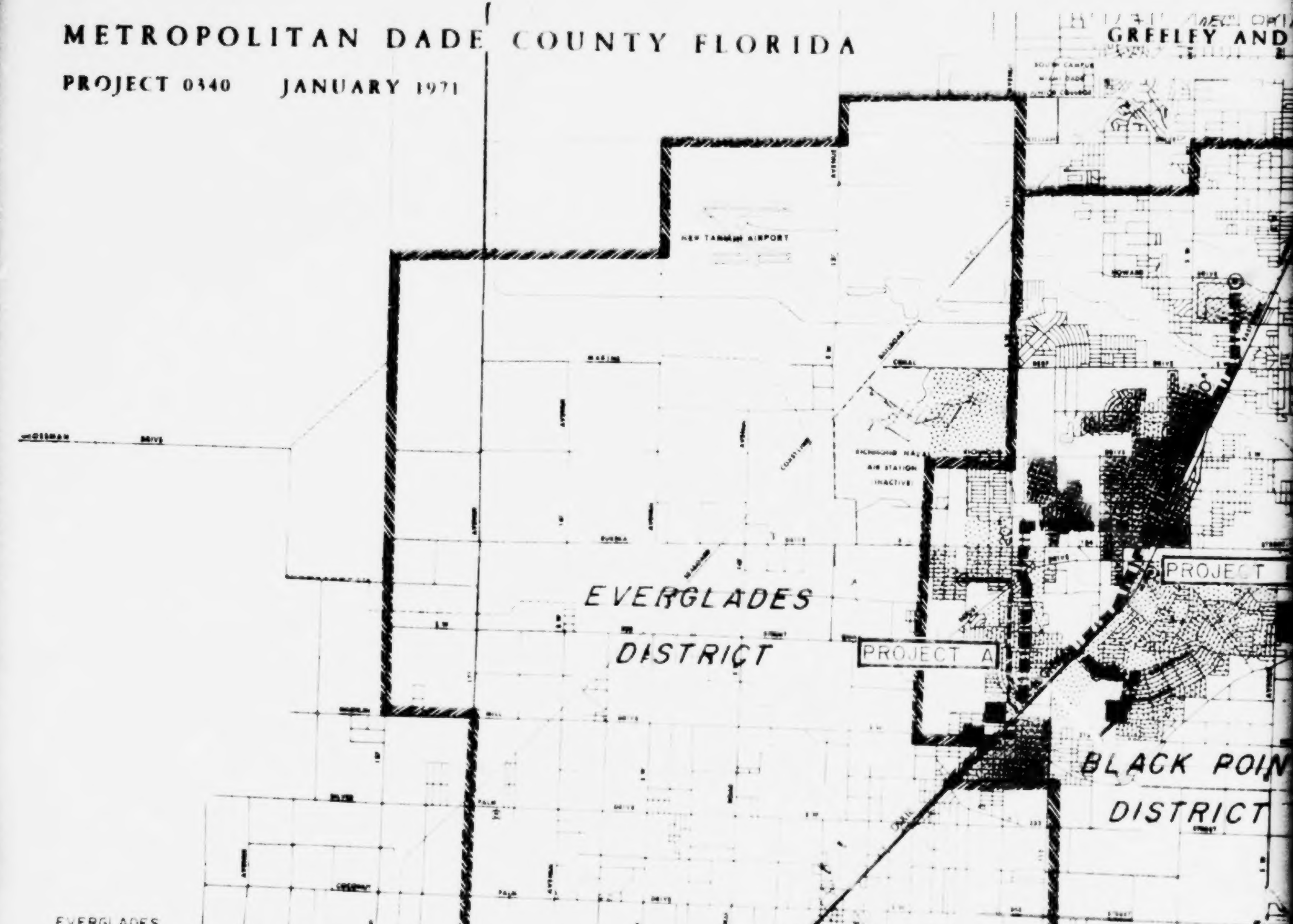
MIAMI - VIRGINIA KEY DISTRICT
SHOWING 1970 MAJOR FACILITIES

PLATE D

METROPOLITAN DADE COUNTY FLORIDA

PROJECT 0340 JANUARY 1971

GREELEY AND



FLORIDA

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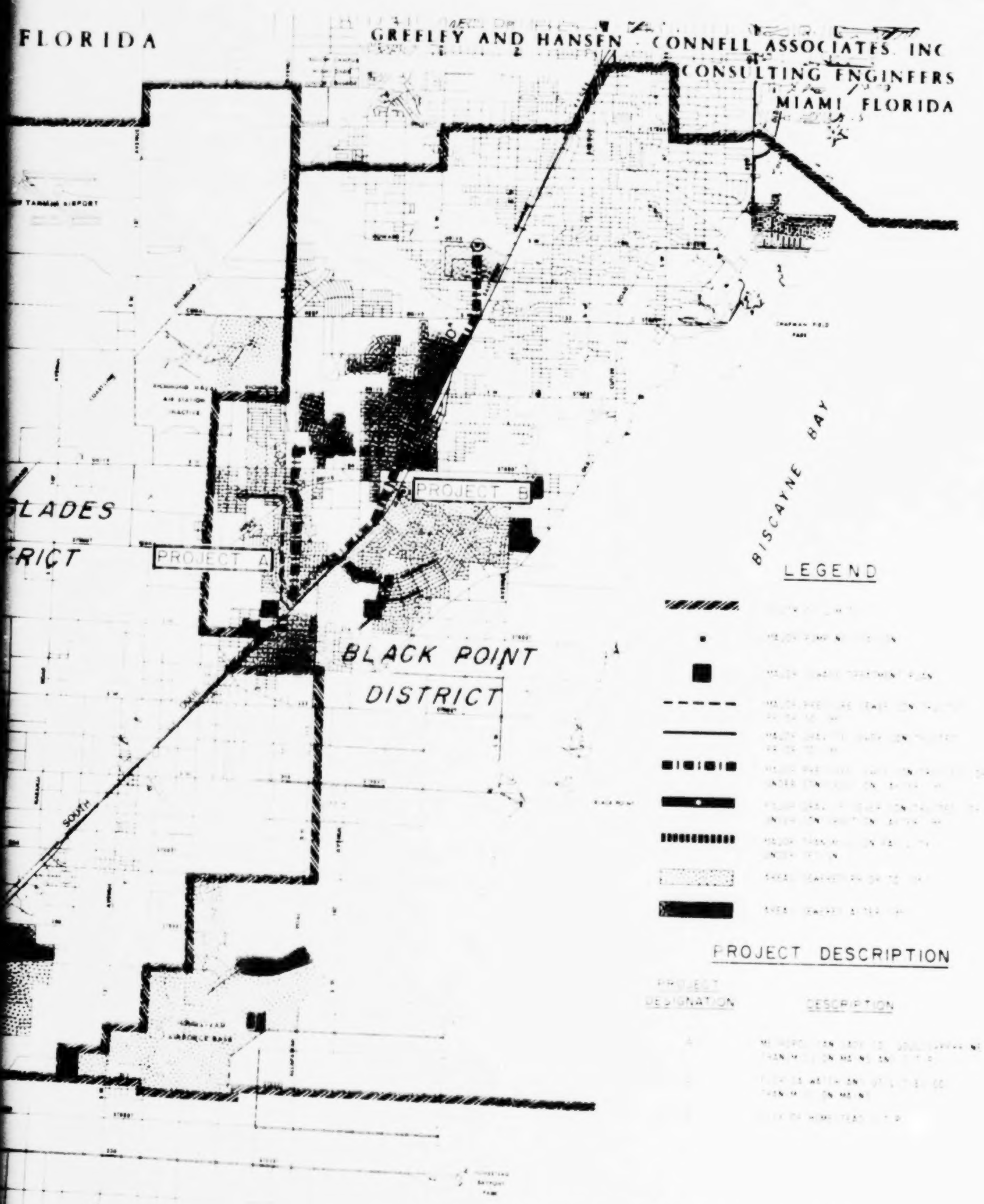
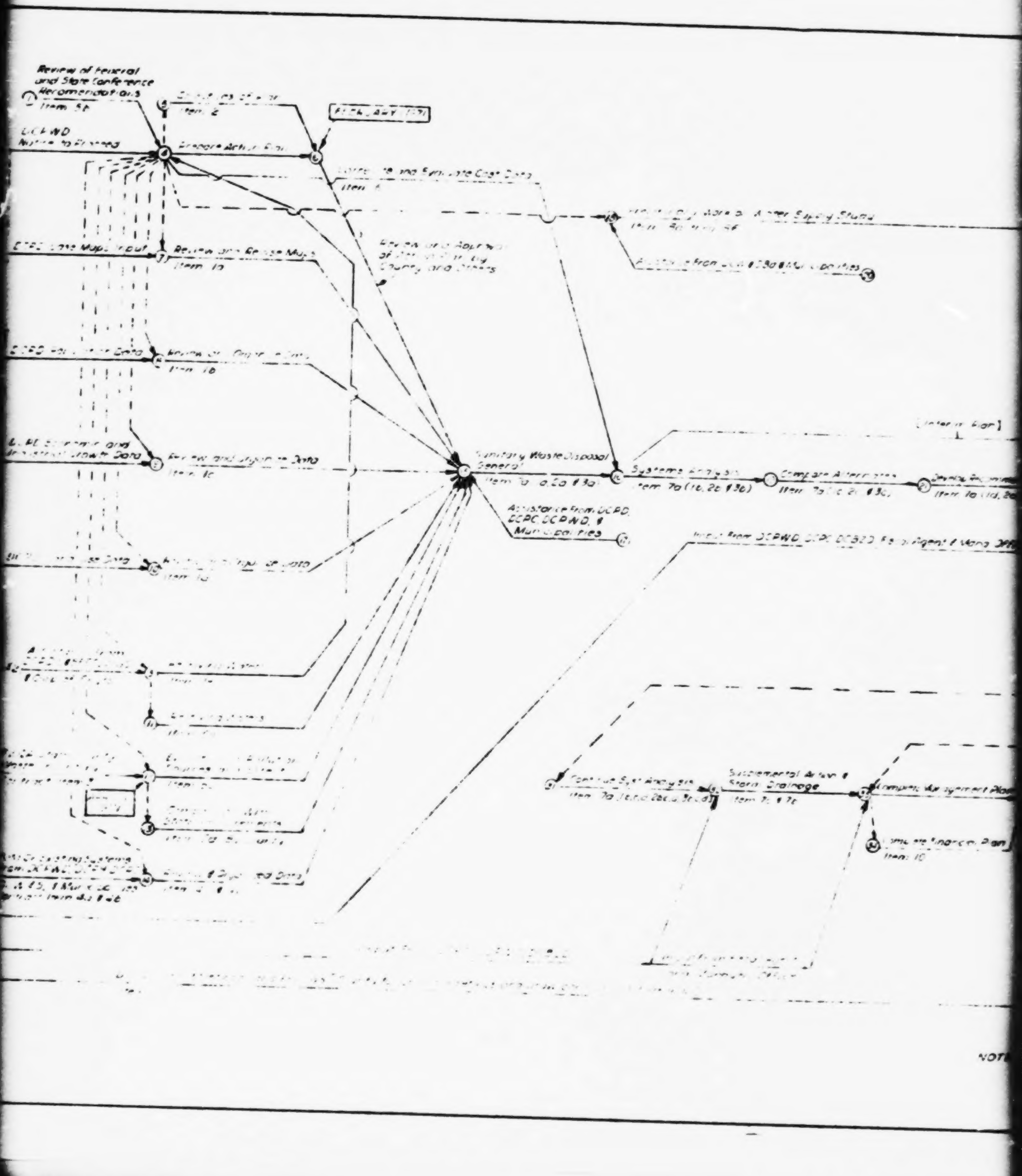
MIAMI FLORIDA



BLACK POINT AND EVERGLADES DISTRICTS
SHOWING 1970 MAJOR FACILITIES

PLATE E


Review of Federal and State Conference Recomendations
Item 5b
Item 2
FEBRUARY 1971
DCPWD Notice to Proceed
Prepare Action Plan
Estimate and Evaluate Cost Data
Item 6
Item 8b
Review and Approval of Action Plan by County and Others
DCPC Base Maps Input
Review and Revise Maps
Item 1a
Item 1b
Review and Organize Data
Item 1c
Item 1d
Sanitary Waste Disposal General
Item 7a, 2a & 3a
Assistance from DCPD, DCPC, DCPWD, & Municipalities
Systems Analysis
Item 7a (1c, 2c & 3c)
Compare Alternatives
Item 7a
Item 7a
(Interim Plan)
Input from DCPWD, DCPC, DCBZD, Fiscal Agent & Mang.
Item 2b
Review & Organized Data
Continue Syst Analysis
Supplemental Action & Storm Drainage
Item 7c & 7e
Complete Management Plan
Complete Financial Plan
Item 10
NOTE

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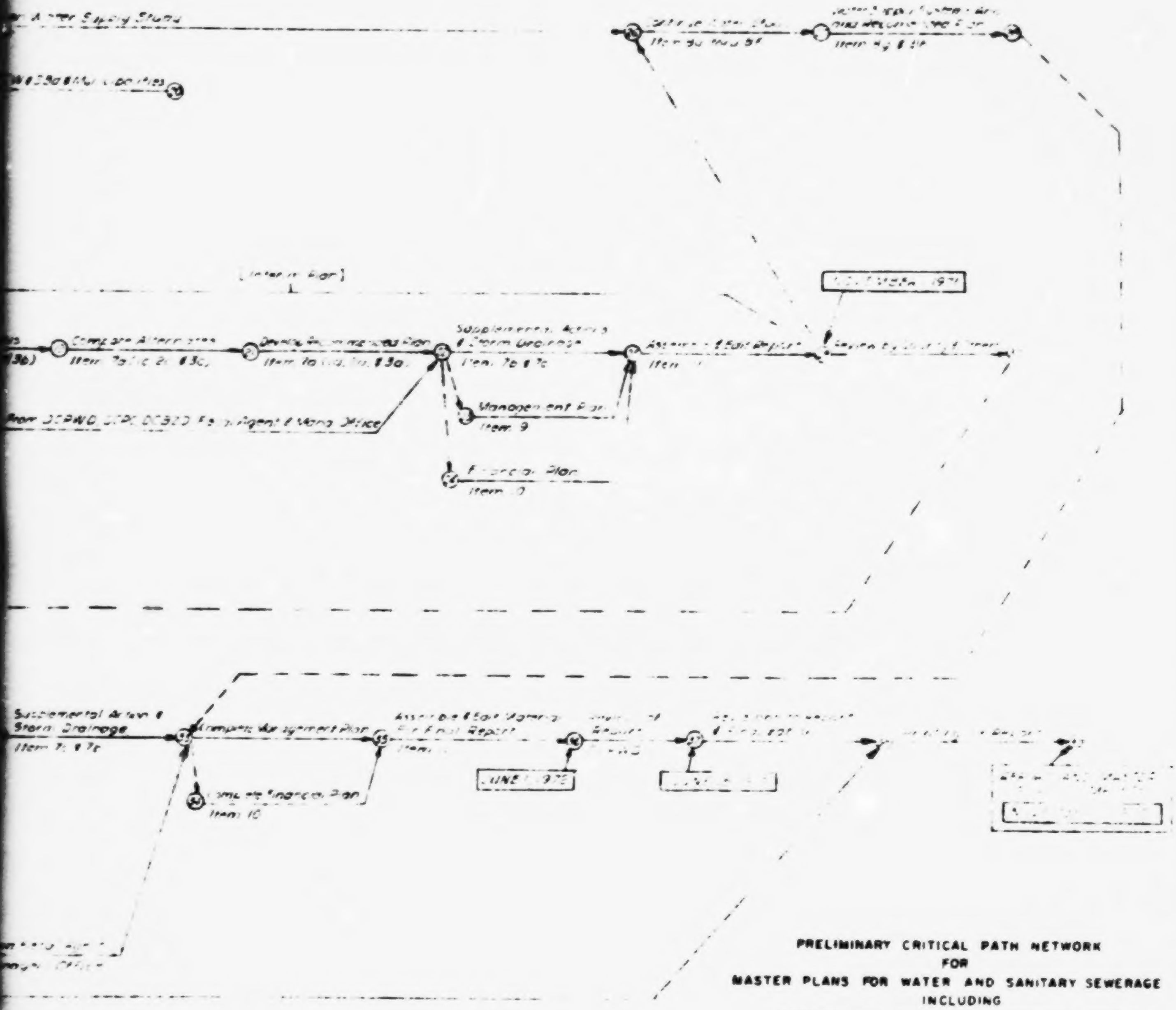
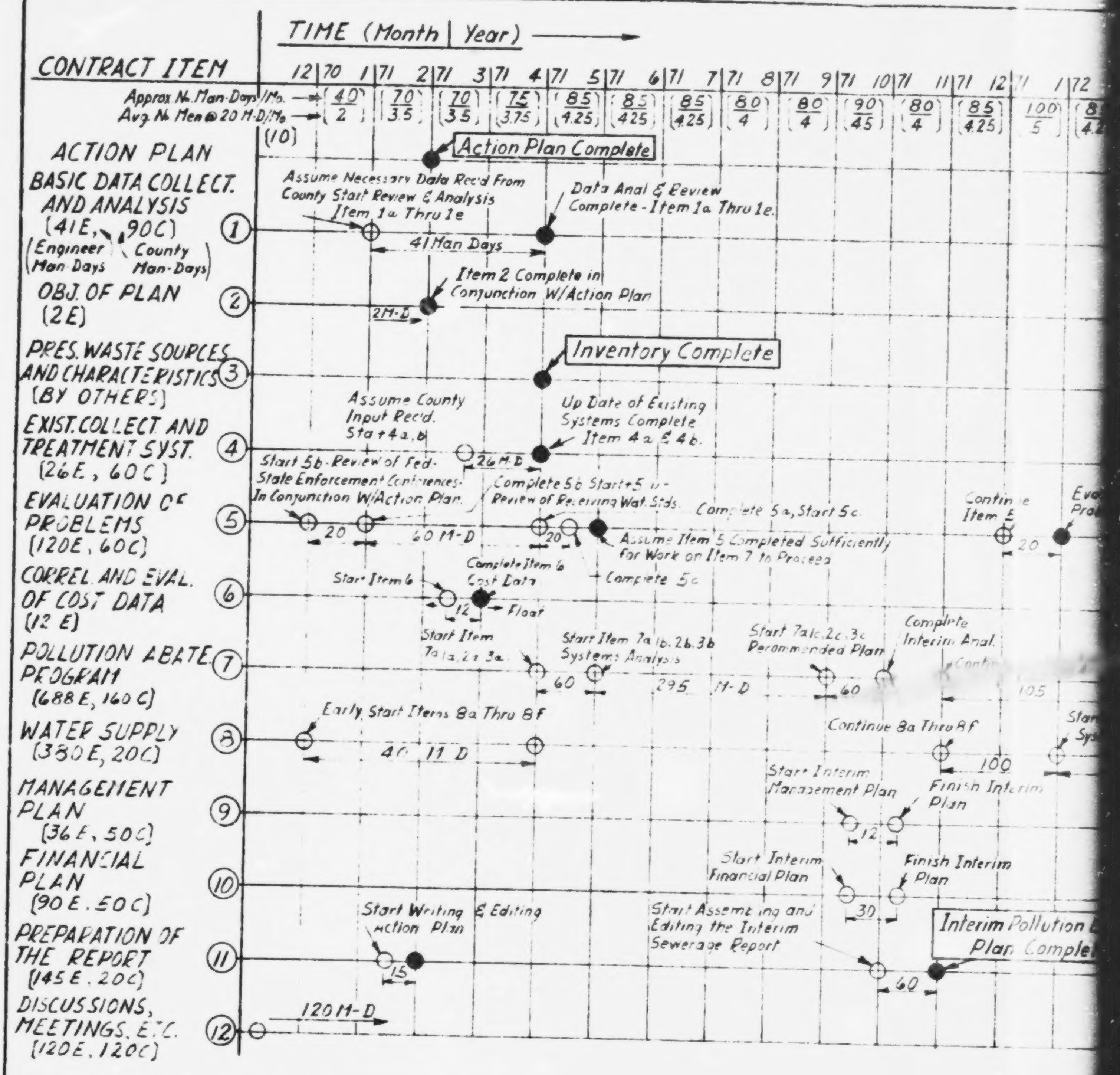


NOTE: "Items" indicated above refer to "Summary of Manpower and Cost Estimates ..." dated November 18, 1970

PRELIMINARY CRITICAL PATH NETWORK
FOR
MASTER PLANS FOR WATER AND SANITARY SEWERAGE
INCLUDING
METROPOLITAN POLLUTION ABATEMENT PROGRAM
FOR
METROPOLITAN DADE COUNTY, FLORIDA
JANUARY 19, 1971
GREELEY AND HANSEN - CONNELL ASSOCIATES, INC

PLATE F



TOTAL MAN-DAYS = 1660 (Engineer)

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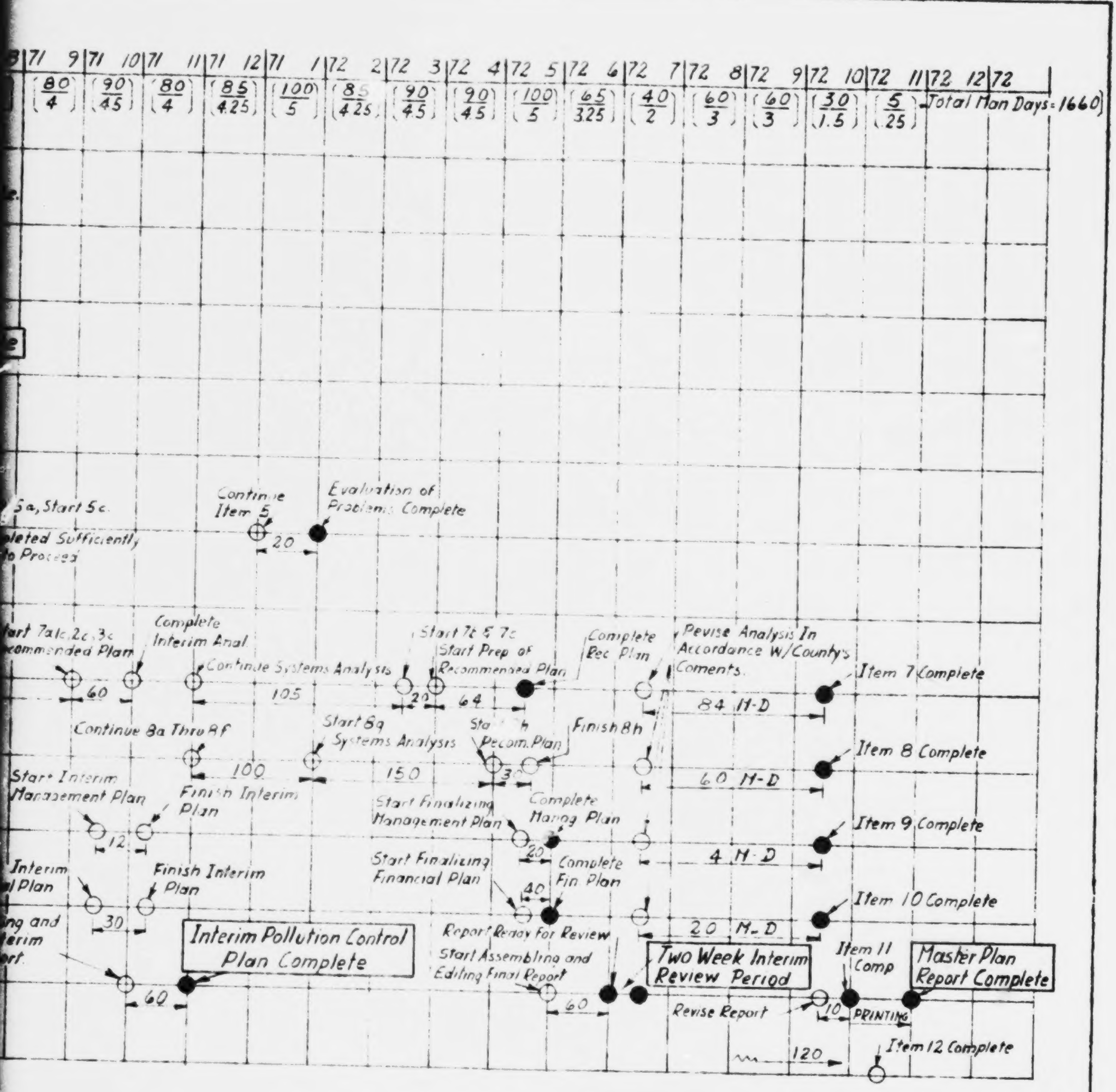

PRELIMINARY MANPOWER SCHEDULE

MASTER PLANS FOR WATER AND SANITARY SEWERAGE

INCLUDING

METROPOLITAN POLLUTION ABATEMENT PROGRAM

FOR

METROPOLITAN DADE COUNTY, FLORIDA

MR. GOODE: The attached supplement has been prepared to indicate major water pollution control facilities which have been constructed or are expected to be constructed in the very near future, all of this since the 1961 Master Plan was adopted by the County Commission. The number and magnitude of these facilities as outlined by maps and charts is a quite impressive undertaking, although we all realize that we still have a good way to go. Both the Grant Application for Comprehensive Water Pollution Control and Long and Short Range Water Facilities Planning, as well as the Supplement to the 1961 Master Plan Sanitary Sewage, have been submitted by the County Commission to the Environmental Protection Agency through the Florida Department of Air & Water Pollution Control.

Next the Board of County Commissioners on February 16, 1971, also adopted Resolution No. R-288-71 committing Metropolitan Dade County as the regional agency to coordinate, develop and construct regional sewage treatment and disposal facilities for the entire north Dade area.

(Which said document follows:)

Not on Agenda Item No. 7 (e) (17)
2-16-71

Resolution No. R-288-71

RESOLUTION COMMITTING METROPOLITAN
DADE COUNTY, AS THE REGIONAL AGENCY,
TO COORDINATE, DEVELOP, AND CONSTRUCT
REGIONAL SEWAGE TREATMENT AND DISPOSAL
FACILITIES IN THE NORTH DADE AREA

WHEREAS, the City of North Miami owns and operates an ocean outfall in the North Dade area and also owns and operates three sewage treatment plants, which at this time, only provide "pretreatment" of sewage effluent prior to discharge through the North Miami ocean outfall; and

WHEREAS, Dade County owns and operates two sewage treatment plants connected to the North Miami ocean outfall, which at this time, also only provides "pretreatment" of all sewage effluent discharged through the North Miami ocean outfall; and

WHEREAS, the City of Miami Beach presently owns and operates an ocean outfall which at this time provides no treatment to its sewage effluent prior to discharge through its ocean outfall; and

WHEREAS, Dade County is presently planning the construction of an additional master sewage treatment plant and an ocean outfall to provide for sewage treatment and disposal from the presently unsewered areas of North Dade County, including the City of North Miami Beach; and

WHEREAS, the 1970 State Legislature enacted a general law requiring all counties to provide a level of secondary treatment for all sanitary sewage discharged to sea through ocean outfalls by January 1, 1974; and

WHEREAS, it is the consensus of the Board of County Commissioners and the affected municipalities that the best interest of the North Dade community would be served by the construction of a single master sewage treatment plant to provide for secondary degree treatment of all sewage eminating from the North Dade area and the City of Miami Beach prior to discharge to sea through the present North Miami ocean outfall and the additional ocean outfall planned to be constructed; and

WHEREAS, it is also the consensus of the Board of County Commissioners and the affected municipalities that the above can best be accomplished by Dade County, as the regional governmental agency, undertaking the responsibility to prepare the necessary master plan and to further be responsible for the financing, construction, ownership and operation of such facilities on a regional basis, with each municipality sharing the costs of operation, maintenance and debt service of these facilities, with Dade County on a fair and equitable proportionate basis; and

WHEREAS, the above stated concept has the full endorsement and support of the Florida Department of Air and Water Pollution Control.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF DADE COUNTY, FLORIDA.

Section 1. The Board of County Commissioners of Dade County does hereby commit Dade County, as the metropolitan and regional governing agency, to accomplish the above stated objective.

Section 2. That in accomplishing section 1 above, the updating of the 1961 Master Plan for sanitary sewage for Metropolitan Dade County to be completed by November 1, 1971, shall include a complete economic and engineering feasibility study and report to effect the above stated objective, complete with financial planning and allocation of financial costs to Dade County and the affected municipalities on a fair and equitable proportionate basis.

Section 3. That the Cities of North Miami, Miami Beach, and North Miami Beach do hereby concur with the above stated plan of action for the construction of regional sewage treatment and disposal facilities in the North Dade area and that the councils of these municipalities should forthwith adopt appropriate resolutions concurring with the plan of action as proposed in this resolution and present these resolutions to the Board of County Commissioners of Dade County at the earliest possible date.

Section 4. That the County Manager is hereby instructed to immediately transmit a copy of this resolution to the Cities of North Miami, Miami Beach and North Miami Beach with a request that official action, as requested by this resolution, be taken by these jurisdictions at the earliest possible date.

The foregoing resolution was offered by Commissioner **Alexander S.Gordon**, who moved its adoption. The motion was seconded by Commissioner **Ben Shepard**, and upon being put to a vote, the vote was as follows:

Earl J. Carroll	**Aye**
S. A. Dansyear	**Aye**
Mrs. Stanley (Joyce) Goldberg	**Aye**
Alexander S. Gordon	**Aye**
Harold A. Greene	**Aye**
R. Hardy Matheson	**Absent**
Harvey I. Reiseman	**Aye**
Ben Shepard	**Aye**
Stephen P. Clark, Mayor	**Aye**

The presiding officer thereupon declared the resolution duly passed and adopted this 16th day of February, 1971.

DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

E. B. LEATHERMAN, CLERK

By: EDWARD D. PHELAN
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.______

MEMORANDUM

Not on Agenda Item No. 7(e)17

TO Honorable Mayor and Members
Board of County Commissioners

DATE February 16, 1971

SUBJECT Resolution Committing Metropolitan Dade County, as the Regional Agency, to Coordinate, Develop, and Construct Regional Sewage Treatment and Disposal Facilities in the North Dade Area

FROM R. Ray Goode
County Manager

On February 9, a meeting was held at Miami Beach City Hall with officials of the Cities of North Miami, Miami Beach, North Miami Beach, Dade County and other interested municipalities, as well as the Chairman and Executive Director of the Florida Department of Air and Water Pollution Control to discuss alternative methods of sewage treatment and disposal for the City of Miami Beach and the North Dade area.

It was the consensus of the officials attending this meeting that the concept of a regional sewage treatment plant, providing secondary treatment as well as an additional ocean outfall should be constructed in the North Dade area to serve not only the needs of the City of Miami Beach and the four municipalities which it serves, but also the Cities of North Miami, North Miami Beach, Dade County and the presently unsewered areas of North Dade County. This concept had the full and complete support of Mr. Nathaniel Reed, Chairman and Mr. Vincent Patton, Executive Director of the Florida Department of Air and Water Pollution Control.

Inasmuch as Dade County is now embarking upon the updating of its Master Plan for sanitary sewage disposal through the year 2000, it is believed that the best interests of all parties can be met by including this concept in the Master Plan which is to be completed by November 1, 1971. The Florida Department of Air and Water Pollution Control agreed with this approach and stipulated that their regional engineer would attend the various meetings held by the County and municipalities in developing this concept with periodic reports to be made to the State to satisfy them that the implementation of this program is being made on an aggressive and timely basis.

This concept is in keeping with the established policy of the Board of County Commissioners that the construction, ownership, and operation of master facilities, including regional pumping stations, transmission lines, treatment plants and ocean outfalls should be that of Dade County while the operation and maintenance of sewage collection systems within the municipalities should be the responsibility of the city.

It is the recommendation of this office that the attached resolution be adopted and transmitted to the Cities of North Miami, Miami Beach and North Miami Beach requesting that their councils take official action to concur in this approach and agree to bear their proportionate costs of the operation, maintenance and debt service of these regional facilities to be constructed, owned, and operated by Dade County, on a fair and equitable basis.

RRG:cq
Attachment

STATE OF FLORIDA)
) SS:
COUNTY OF DADE)

I, E B LEATHERMAN, Clerk of the Circuit Court in and for Dade County, Florida, and Ex Officio Clerk of the Board of County Commissioners of said County, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of Resolution No. R-288-71, adopted by the said Board of County Commissioners at its meeting held on February 16, 19 71.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on this 17th day of February, A. D. 19 71.

E. B. LEATHERMAN, Ex Officio Clerk
Board of County Commissioners
Dade County, Florida

By ______________________
Deputy Clerk

SEAL

Board of County Commissioners
Dade County, Florida

MR. GOODE: These facilities will provide a minimum of secondary degree treatment prior to discharge through ocean outfalls for the entire north Dade area, including the cities of Hialeah, Opa-Locka, and North Miami, which are already sewered or in the process of being sewered.

This regional facility will also provide for the treatment and disposal of sewage from the cities of Miami Beach, presently sewered but with inadequate treatment, and North Miami Beach, presently unsewered.

These facilities will also be designed for the final treatment of all sewage effluent from the inland treatment plants of Miami Lakes, Myrtle Grove, which is owned by North Miami Beach, and Carol City Utilities, which are presently discharging into inland canals, as well as for all other sewage treatment plants in the North Dade area now discharging into inland canals. These facilities, of course, will also process treatment of sewage from areas which are presently unsewered and are presently served by septic tanks.

With respect to Section 9 of the conclusions and recommendations of the conferees in October, the Board of County Commissioners on February 16 also passed and adopted on first reading an ordinance amending the Code of Dade County to provide, among other things, for the control of the discharge of certain materials into the waters of Dade County from vessels, houseboats, piers, docks, and other similar structures, providing for the regulation of houseboats as to sewage standards and locations, and also providing for the removal of wrecks and debris from the waters of the county by the owner or by our Pollution Control Office. This ordinance will be presented to the County Commission for second and final hearing at its next meeting on March 2. The final outcome of this ordinance will be largely dependent upon the determination of what regulatory measures may be taken by Federal and State agencies in this regard which may negate the necessity for certain provisions of this ordinance. I am sure this is something that our Commission will want to discuss with the conferees later this morning.

(Which said ordinance follows:)

Agenda Item No. [illegible] (d)
2-16-71

ORDINANCE NO. ____________

ORDINANCE AMENDING CHAPTER 24, CODE OF METROPOLITAN DADE COUNTY, FLORIDA, DEFINING CERTAIN WORDS AND PHRASES WHERE USED HEREIN; PROVIDING FOR THE REGISTRATION OF VESSELS AND HOUSEBOATS; PROVIDING FOR THE REGULATION AND LICENSING OF MARINAS BY THE POLLUTION CONTROL OFFICER; PROVIDING FOR MINIMUM SPECIFICATIONS FOR MARINAS FOR LICENSING; PROVIDING FOR THE CONTROL OF THE DISCHARGE OF CERTAIN MATERIALS INTO THE WATERS OF DADE COUNTY FROM VESSELS, HOUSEBOATS, PIERS, DOCKS AND OTHER SIMILAR STRUCTURES; PROHIBITING THE PLACING OF CERTAIN MATERIALS ONTO VESSELS, HOUSEBOATS, PIERS, DOCKS, WATERS AND SHORES OF DADE COUNTY; PROVIDING FOR THE REGULATING OF HOUSEBOATS AS TO SEWAGE STANDARDS AND LOCATIONS; PROVIDING FOR THE REMOVAL OF WRECKS AND DEBRIS BY THE OWNER THEREOF OR BY THE POLLUTION CONTROL OFFICER; PROVIDING A TIME SCHEDULE FOR COMPLIANCE; PROVIDING FOR INCLUSION IN THE CODE OF METROPOLITAN DADE COUNTY; PROVIDING A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE

BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF DADE COUNTY, FLORIDA:

Section 1. Chapter 24 of the Code of Metropolitan Dade County, Florida, is hereby amended by adding the following sections thereto:

Sec. 24-57. Definitions.

For the purposes of sections 24-57 through 24-63 hereof, the following definitions shall apply, unless it is obvious from the context that a different meaning is intended.

(a) "Dock" shall mean any fixed or floating structure for securing vessels or houseboats loading or unloading persons or property, or providing access to the water, and includes the terms "pier", "wharf", "float" or any other landing facility.

(b) "Marinas" shall mean any area within Dade County where one or more sites or locations are used or designed for use for the location or dockage of vessels or houseboats on land or in water.

(c) "Houseboat" means any vessel used or designed primarily to be occupied as living quarters or for any business or occupation whatsoever, or for any private or social club of whatsoever nature, including the use thereof for the entertainment or recreation of guests or tenants, whether such vessel is self-propelled or not.

(d) "Vessel" means every description of watercraft and air boats, other than a seaplane on the water, used or capable of being used as a means of transportation on water.

Sec. 24-58. Registration of Vessels and Houseboats.

Any vessel or houseboat which remains within Dade County, Florida, more than twenty-four (24) consecutive hours must be registered with the owner or operator of the facility at which it is moored or docked. The pollution control officer shall prescribe forms for such registration. It shall be the duty of any person owning, operating or maintaining any marina to maintain such forms and to make them available to the pollution control officer. Failure to provide such records to the pollution control officer upon his request shall constitute a violation of this ordinance.

Sec. 24-59. Regulation of Marinas.

(a) No person shall lease, rent, use or permit the use of docks, piers, wharfs or similar structures within Dade County unless they possess a valid license to operate a marina pursuant to the provisions of this ordinance.

(b) Marinas shall meet the following minimum specifications for licensing:

1. A permanent float, dock or slip for the mooring or docking of each vessel or houseboat from which such vessel or houseboat may be directly boarded.

2. Each space used or intended for a vessel or houseboat used or intended for living aboard or business purposes must be provided with the following: A permanent water supply with an individual antiback flow valve; a sewer connection leading into a sewage disposal system approved by the pollution control officer and meeting the requirements of this chapter; proper pumping and equipment to reach the sewer line; and a permanent supply of electricity.

3. A system approved by the pollution control officer for the pumping out of onboard sewage storage tanks, available for use by all persons.

(c) Applications for licenses hereunder shall be made to the pollution control officer on forms provided by him for that purpose.

(d) Owners or operators of marinas who do not allow persons to live aboard vessels and houseboats located therein or who seal all toilet and other discharge facilities of vessels and houseboats located therein so that such facilities are incapable of discharge, need not meet the minimum requirements of subsection (b) 1, 2 and 3 hereof, and need not obtain a license hereunder.

Sec. 24-60. Pollution Control and Sanitation.

No person shall:

(a) Discharge, or allow any other person on a vessel or houseboat under his control or command to discharge, any human or animal excreta from any head, toilet or similar facility on a vessel, or houseboat in the waters of Dade County, Florida.

(b) Throw, discharge, deposit, leave or cause or permit to be thrown, discharged or deposited or left, either from the shore or from any dock, pier, wharf or similar structure or any vessel, houseboat or elsewhere, any refuse matter of any description into the waters of Dade County, Florida, or onto the shoreline of Dade County, Florida.

(c) Place or allow to be placed on vessels or houseboats, garbage, refuse or waste material of any description.

(d) Pump or discharge from any vessel, houseboat or tank into the waters of Dade County, Florida, oil, spirits or any flammable liquid, or deposit any roughage, refuse or matter of any offensive character, therein or upon any pier, wharf or dock.

(e) Throw, place or leave any dead animals, or putrid matter, into or in the waters of Dade County, Florida, or onto the shoreline of Dade County, Florida. This subsection shall not be construed to apply to bait used in the ordinary course of fishing, crabbing, lobstering and other like practices.

Sec. 24-61. Regulation of Houseboats.

No person shall use or occupy or permit the use of or occupancy of a houseboat for living quarters, either permanently or on a temporary basis, on the waters of Dade County, Florida, except in a marina operated pursuant to a permit issued by the pollution control officer and unless the houseboat is designed and maintained so there is a single opening above the waterline for waste and sewage removal, and such opening is properly connected to a permanent sewage disposal system in a manner approved by the Dade County pollution control officer; provided this section shall not apply to houseboats with all toilet and discharge facilities sealed and rendered incapable of discharge.

Sec. 24-62. Removal of Wrecks and Debris.

The pollution control officer is authorized in the event any vessel or houseboat is sunk or seriously damaged within Dade County, Florida, or the debris from same is located within Dade County, Florida, to order the removal of such vessel, houseboat or debris within the shortest practicable time. The pollution control officer may effect the removal of such vessel, houseboat or debris in the event his order to remove same is not obeyed and charge the cost of same against the owner, which cost may be collected in a civil action. Should the pollution control officer not be able to serve the order of removal hereunder, he shall post the same in a conspicuous manner at said location of said vessel, houseboat or debris, which posting shall constitute sufficient notice hereunder. Otherwise said order shall be served by registered mail or hand delivery upon the owner of said vessel, houseboat or debris.

JGF/rk/mo

Sec. 24-63. Time Schedule for Compliance.

(a) The following sections of the Dade County Code shall be complied with on and after October 1, 1972: Sections 24-59; 24-60(a); and 24-61.

(b) The following sections of the Dade County Code shall be complied with on and after the effective date of this ordinance: Sections 24-57; 24-58; 24-60(b) through (e); and 24-62.

Section 2. Inclusion in Code. It is the intention of the County Commission, and it is hereby ordained that the provisions of this ordinance shall become and be made a part of the Code of Metropolitan Dade County, Florida; that the sections of this ordinance may be renumbered or relettered to accomplish such intention; and that the word "ordinance" may be changed to "section", "article", or other appropriate word.

Section 3. Severability. If any section, subsection, clause or provision of this ordinance is held invalid, the remainder of this ordinance shall not be affected by such invalidity.

Section 4. Effective Date. The provisions of this ordinance shall become effective ten (10) days after the date of its enactment.

PASSED AND ADOPTED:

Approved by County Attorney as
to form and legal sufficiency.

JGF

MEMORANDUM

TO Honorable Mayor and Members, Board of County Commissioners

DATE January 29, 1971

SUBJECT Marina Pollution Control Ordinance
Not on Agenda Item No. 6 (d)

FROM Thomas C. Britton
County Attorney

The attached ordinance is submitted to the Board of County Commissioners as a Not on Agenda Item at the oral request of Commissioner Greene on January 26, 1971. It is a proposed amendment to Chapter 24, Dade County Code, our pollution control ordinances. The enforcement of the provisions would lie within the authority of our Pollution Control Officer.

There are several goals this proposal intends to accomplish. Proposed Section 24-62 would grant to the Pollution Control Officer the authority to order the removal of sunk or seriously damaged vessels, and debris therefrom, from Dade County waters. Should the owner fail to obey the order, the Officer may have these items removed and charge the owner therefor.

The main thrust of the proposal is directed toward eliminating the discharge into Dade County waters of human waste matter and other deleterious materials from "live-aboard" vessels. It would provide three alternatives to owners of vessels docked or moored in our waters;

(1) The vessel may be docked at a marina which is licensed as having appropriate sewage treatment and removal facilities. The vessel may be used as a "live-aboard" if so docked.

(2) The vessel may be docked at an unlicensed dock or pier, in which case no living aboard would be allowed.

(3) The vessel may be docked at an unlicensed facility where living aboard is allowed only if all toilet and other discharge facilities of the vessel are sealed and rendered incapable of discharging their deleterious materials into Dade County waters.

Marinas allowing on board living and not requiring sealed discharge facilities on vessels will be licensed by the Pollution Control Officer to assure that the human waste and other deleterious materials from vessels may be pumped into appropriate on shore treatment plants. The proposal makes it unlawful to discharge deleterious materials from vessels and dock-side facilities into Dade County waters.

Proposed Section 24-63 provides a time schedule for compliance with the standards. Recognizing that changes will be needed in some vessels and marinas, a reasonable time for compliance has been set forth.

This ordinance has been written in such a manner as to comply with the Conclusions and Recommendations of the Federal-State Conferees, Dade County Enforcement Conference, October 22, 1970, particularly paragraph 9 thereof. It has further been written so as to regulate matters not pre-empted by any Federal acts.

Thomas C. Britton
Thomas C. Britton
County Attorney

Prepared by:

John G. Fletcher
John G. Fletcher
Assistant County Attorney

TCB/JGF/ma
Attachment

MR. GOODE: As you are aware, Dade County has sold a $50 million revenue bond issue, $32.5 million of which is earmarked for water and sewer facilities. It is the plan of this office, and concurred in by the Dade County Water and Sewer Authority, that these funds are to be used on as expanded a basis as possible with the maximum use of Federal and State matching funds to update County facilities and to construct other regional facilities. It is not our intention, at least in this office and the Water Sewer Authority, to use these funds for the acquisition of private utilities which, as in the case of Westwood Lakes Utilities, are contemplated to be acquired through the issuance of revenue bonds.

I bring up last one of our major what we consider a top priority item for discussion at this conference. We are hopeful that this conference will help us establish certain guidelines and criteria for Dade County to follow in its regional planning of water and sewer facilities in the South Dade area.

As you are aware, Dade County has recently developed and will soon have in operation a 2-million gallon per day water treatment plant and sewage treatment plant with a capability to be expanded to 8 million gallons per day. Dade County, not only the metropolitan government but the other private or public utilities serving the South Dade area, needs specific guidelines with which to plan the expansion of these facilities so that developers in the South Dade area can accordingly complete their plans for the economic development and growth of the area with the assurance that sanitary sewerage will be available for these developments on a timely basis.

It is hoped that the matters that I have brought to your attention will reflect to you the positive actions taken by this County Commission and that they will be accepted by the Federal-State conferees as an indication of Dade County's desire to cooperate and comply with the previously issued conclusions and recommendations of the conferees.

During any discussion period that the conferees may wish, we do have Mr. Dennis Carter, who has been serving as a Special Assistant in the Manager's Office for water sewer matters for some four years, a newly-appointed Executive Director of the Water and Sewer Authority, Mr. Robert Steytler,we have our consulting engineers here, there are several members of our Water and Sewer Authority here as well as the Board of County Commissioners.

Thank you, Mr. Chairman.

MR. WHITE: Thank you, Mr. Goode.

Before we get too far along,I would like to ask our recorder if we are straight on all the submissions for the record?

Very good. We appreciate that, Mr. Goode. And I am sure that we will have several questions to ask of you.

Mr. Reed.

MR. REED: Yes, I have a question. I have a couple of questions.

I do want to get into the boat discharges, which Mr. Patton is most familiar with. Although it is a delicate subject, I think it has to be raised today. Perhaps Mr. Sloan will go into it later, and I recognize the difficult position he is in.

But for the master plan to be limited by the premature restriction of the growth of Virginia Key has got to be on the minds of the conferees. We are deeply concerned about this. And I know it is one that hackles are raised on if we bring it up, but I think we cannot leave today's hearing without some disposition of this matter. My suggestion to you, Mr. White, is to ask the city of Miami to report to the conferees on or about April 1 at the resumption of the next conference with a firm statement as to the future of Virginia Key that everybody in this county will fully understand.

I personally find it hard to believe, with the amount of money spent on the transmission line to Virginia Key, that we are going to cut off a superb installation which could rapidly solve many of the problems of South Dade. I think this one has got to be worked out locally and I think we could urge the Chamber of Commerce to give us a hand on this.

The other point which I think has to be made is we have to finalize something more stringently with the city and with the county on the connections of presently owned and operated septic tanks where sewer lines are available. It is both a State Board of Health regulation and a county and a city regulation that hookups will occur when sewer lines become available, and yet it is most apparent that in many areas in the city of Miami and in Dade County there are areas of septic tank development which could be served at this time by presently existing sewer lines, and I think we have to have some resolution of that question by April 1. I think that one can be resolved by a firm statement by the county and the city. The city's voice definitely needs to be heard on this one.

I would like to turn over to Mr. Patton, who has been in touch with the Environmental Protection Agency, on the disposition of sewerage from boats.

MR. PATTON: Thank you, Mr. Reed.

First I would like to compliment the county on the proposed ordinance, copies of which have been placed in the hands of the conferees. I think it is an excellent ordinance. I think that if something of this type is implemented it will help solve another one of the water pollution problems of the area. My recommendation to Mr. Reed and the other members of the Board is that they give favorable consideration to the possible adoption of such an ordinance on a Statewide basis.

There is a further complication of the Federal influence, and I am not putting this in a derogatory tone, but EPA has come out with some proposed standards which were objected to, let's say most violently, by some of the States surrounding the Great Lakes. Some of these States have already gone on record, promulgated rules which said in effect there shall be no discharge into the **freshwaters** of these States. I think this probably prompted a meeting which will be held in Washington on the 25th of February, a meeting of EPA with representatives from several different States around over the entire country. Florida has been invited to send a representative and we will have someone there to present our viewpoints. So we are hopeful that this may result in a change in the proposed EPA rules which may in turn blanket the entire country. If this does not come about, then I am hopeful that the State can move in this direction.

Again I would like to say that I think Dade County is to be commended for the sternness and the strength of the ordinance which has been proposed.

Thank you.

MR. REED: Let me see if I understand you, Mr. Patton.

And I think it probably would be worthwhile for every one of us in Dade and for all of those of us who are interested in Statewide rules, because when I read the rule I found it to be well written, well thought out. I had given instructions to staff to try to work something out like this for a Statewide rule, and I think staff got off with a very light burden because I think they promptly adopted the wording of the Dade County ordinance.

But before pursuing this matter, I would suggest that we wait for the outcome of the meeting of the various States and the Federal Government and see what the minimum rules will be promulgated from Washington, which will assist us in finalizing a decision on the treatment of discharges from boats. I would make that recommendation to the County Officer and to the County Commissioners who are deeply involved in this. We should know very, very quickly.

MR. GREENE: Mr. Chairman, may I ask a question at this time?

MR. WHITE: Yes. Would you come forward and identify yourself, please?

HAROLD GREENE

COUNTY COMMISSIONER

DADE COUNTY,FLORIDA

MR. GREENE: I am Harold Greene. I am the Dade County Commissioner that originally proposed the ordinance.

H. Greene

I just want to first of all say that most of the work on it was done by Mr. John Fletcher of the County Attorney's Office, who has done a commendable job, and with a great deal of assistance by Mr. Baljet. So while I may have proposed it, I can't necessarily say that I am the author.

The idea, of course, resulted from the original Federal Clean Water Act and then from the information that we received through the North Dade Village ordinance, which this in some ways tracks, but it is not at all the same ordinance. We are terribly concerned with the possibility that the Federal water standards will include a chlorinator macerator with either 90 percent or 94 percent treatment, for several reasons, one of which, of course, it changes the shape and the smell but it doesn't change what is coming out. And the question of whether or not that will be biologically pure or not is something that I don't think anybody can determine until you test it.

There is also the question of what that chlorine outfall would do under crowded conditions in small bays and estuaries. I don't know what effect chlorine will have in that kind of situation if there is a massive dose of chlorine. But I think that that would have to be tested.

I would hope that the Federal standards would be stronger than that. I don't think it is a good idea to allow any kind of weakening in the laws, especially when it is so urgent, it is so important that we protect whatever we have left of our ecology.

Thank you.

MR. WHITE: If I may respond in part to that, I am sure that, well, we will have regulations developed in the very near future, but this would not preclude a more stringent set of regulations at the local level.

MR. GREENE: We have understood that, which was one of the reasons that this ordinance has come about. Of course this is basically for live-aboard vessels, this ordinance. I would hope that the Federal Government would eventually expand something similar to this to all vessels wherever they would be, although I would doubt that the casual boater needs quite the degree of control that a live-aboard vessel, which I consider to be nothing but a water trailer, would need.

MR. REED: Agreed.

MR. GREENE: Thank you.

MR. REED: All right.

Shall I proceed, Mr. White, in calling--

MR. WHITE: I would like to ask Mr. Traina first if he has any questions.

MR. REED: All right.

MR. TRAINA: Perhaps Mr. Goode or Mr. Carter, I don't know. I had some questions about the action plan as was given to us and formally presented to us and the confusion in my mind with regard to the distinction between master planning and this comprehensive planning that we have talked about. I would like to get some response as to in the minds of the County Commissioners, from Mr. Carter perhaps, what are you talking about; are you talking about master planning in your November 1, 1971, date and what are you talking about comprehensive planning with regard to a later date?

MR. CARTER: Mr. Traina, if I may respond.

The proposal is that between now and November 1, 1971, that we will come up with an interim master plan for sanitary sewage treatment and disposal throughout Dade County which would be a five-year action plan complete with all facilities that would be constructed within that period and the method of funding and the method of financing. Within the remaining year from November 1, 1971, to November 1, 1972, that we would then come up with the final complete master plan for not only sanitary sewage disposal through the year 2000 but also with a short range and long range comprehensive plan for water facilities through the year 2000.

So what we are saying in effect is that in the remaining eight months we are attacking the most important problem facing us today and that is the matter of water pollution in

Dade County and coming up with an immediate five-year plan as to how it will be abated and how it will be financed and paid for with construction schedules.

Then the remaining year, to update that to a comprehensive plan, will carry forth this plan to the year 2000 together with the water facilities that will be constructed and needed in Dade County at that time. Of course it is realized that this master plan will also have to be updated approximately every 10 years.

MR. REED: I hope it is less than that.

MR. TRAINA: Yes, I think so, the way it develops.

Mr. Carter, will this initial effort include a specific program for the elimination of septic tanks in urban areas in Dade County?

MR. CARTER: Yes, it will.

MR. TRAINA: With the priority areas, schedules, and so on?

MR. CARTER: Yes.

MR. TRAINA: We have had some conversations with you and your staff regarding Federal participation, and I did, more for the record than anything else, want to again state that under our provisions with regard to 3(c) planning that we are very much anxious to participate with local groups as exist here in Dade County to develop water quality management plans.

We don't feel that these funds should be used to develop master plans for sewers and sewage construction.

I did want to make that clear, because frankly it appeared to me somewaht confusing in the Action Plan that was given to me yesterday that this confusion appears to still exist.

MR. REED: Say that again, Paul. I didn't get that.

MR. TRAINA: The point is, in the Action Plan the question of master plans with November 1 deadline seems to be mixed up with developing comprehensive water quality management plans in which we participate under 3(c) planning. We don't want to give the impression that we will participate to develop a master plan for Dade County to meet the recommendations of this conference.

MR. REED: What do you wish to participate in?

MR. TRAINA: We will participate in developing water quality management plans regarding water reuse and some of the things that Mr. Goode had indicated before with regard to ultimate disposal of wastes and so on, but we don't think that we should be developing or participating in a program that is used to meet the specific recommendations of this conference with regards to elimination of septic tank areas and with regard to provision of secondary treatment. This we feel is a local effort, should be financed locally.

MR. CARTER: Let me respond to that, Mr. Traina.

The application that we are submitting to you under provision 3(c) of Public Law 84-660 is to meet just what you have stated. However, we have placed priority between now and November of 1971 on an action plan for sewage abatement and pollution control in Dade County. This is just part of a big picture and it is the first thing that we will be coming out with. We would like very much, if possible, to have a complete comprehensive plan for everything through the year 2000 completed by November 1 of 1971, but we are advised that this is just completely impossible, so we are taking it on a priority basis and I just want to assure you that the interim master plan which will be coming out in November of 1971 is a part, the first part, of the overall comprehensive plan which will be coming out in November of 1972.

MR. TRAINA: And you will proceed with that irrespective of Federal financing, on planning?

MR. CARTER: Yes, we will.

MR. TRAINA: Fine. O. K. Well, that is the point I want to make.

MR. WHITE: Mr. Patton, do you have any questions?

MR. PATTON: No.

MR. WHITE: I would like to ask one with respect to the County's practice now on new subdivisions, the development of new subdivisions.

Are you requiring collection lines to be installed whether trunk sewers are there to pick them up or not or are you permitting developments of this sort at this time?

MR. CARTER: Well, that again depends on the size of the development. If it is a sizable development where collection lines can be installed and connected to an available sewer interceptor to carry away and treat and dispose of it, this we are requiring. But in isolated cases where there are individual lots in an area, for instance, which is already predominantly on septic tanks, the area is still being allowed to continue to develop on a limited basis on septic tanks, the limitation being, number one, that if public water is available that no more than one residential home can be constructed on a lot of less than one quarter acre in size. If public water is not available and septic tanks are needed, then the requirement is doubled, meaning a residence has to have a half acre for development.

MR. WHITE: The point I am trying to get at, in a situation where you do not have an interceptor available that you would discharge collection lines into, are you permitting development without collection lines now? I mean in many situations in cities that I know about they require that contractors put in collection lines even though there is no place to discharge to at this particular time and with the idea of keying it in to a system when it becomes available. Now, are you permitting this type construction now to go on in these outlying areas without any provisions for collection lines?

MR. CARTER: To answer your question, not all construction in Dade County is required with sewer lines to go in at the same time as a septic tank is being installed. However, this is a judgment factor which the Pollution Control Officer exercises, that if the development is of such size and significance, then the developer is required to put in sewer lines, and if it doesn't connect to a public sewer system, then he must connect to an on-site sewage treatment plant which will later be converted to a pumping station and that system be used to tie in to a sewer system when it becomes available. But again on an individual lot-by-lot basis, no, we do not require it.

MR. WHITE: Thank you.

MR. TRAINA: One other question.

Mr. Carter, in the Action Plan you refer to the Goulds-Perrine plant. Is it my understanding that you are proposing to expand this plant to 8 million gallons a day?

MR. CARTER: Mr. Traina, this plant that we have right now is a 2-million gallon a day water treatment plant and a 2-million gallon a day sewage treatment plant complete with tertiary treatment and phosphate removal as required by your department. It is a 2-million gallon a day plant simply on the basis that at the time we went into construction we didn't have the funds to build beyond that, and besides that the area that we are developing is going to take time to develop.

So what we did was we provided a water treatment plant and a sewage treatment plant to take care of the immediate needs for maybe the next two to three or maybe even five years.

However, the transmission lines that go from these plants to these neighborhood development areas which are now completely sewered under the neighborhood development program are sized to handle 8 million gallons a day, so actually we have a backbone system of water lines and sewage transmission lines of 8 million gallons a day, and we have water and sewage treatment plants on a site which are presently 2 million gallons a day but which may be expanded to 8 million gallons a day.

MR. REED: This is a very good point to get this one. Manager Goode mentioned this point, so let's spend a little time on this and get this one resolved.

I think from Mr. Patton's and my standpoint and the whole Board's standpoint we are very interested in assisting the county in obtaining a demonstration grant in this area to pinpoint where to discharge their wastes, so if we could proceed on that application for a demonstration grant we would be most receptive in forwarding it and giving it some help along the line. Because this seems to be the question of Homestead, it seems to be the question what do we do with it, and I think the sooner we resolve this question through a demonstration grant the better we will all be off.

MR. CARTER: The main problem we have in the South Dade area is that we have now got up the applications for sewage disposal far in excess of the 2 million gallons a day capacity we have. Of course these are from developers who will be developing properties that have been zoned within the next five years. We can handle what they are going to be able to give us for the next two to three years without any trouble with what we have got, but our problem and limitation is agreeing to take on an excessive amount of sewage that may be generated from these developments after we reach the two million mark. We don't know what our position is going to be at that point and right now we are stymied in that we cannot tell the developers what they can do after this 2 million gallon a day package we are now limited to is reached, and we are looking to you to give us a solution to the effect that we can advise developers, "yes, you may proceed to develop on an orderly basis and at such time as our plant capacity is reached we will then be able to expand it in such a manner as it meets all requirements and standards of the State and Federal conferees."

But we must have some answer to give these developers so that they can know and plan on what they are going to construct on the lands that they presently own and are paying taxes on.

MR. TRAINA: Well, the reason, Mr. Reed, I brought this question up is that I think this, as you say, is maybe one of the real good issues with regard to South Dade County. I think if we can resolve it from a technical standpoint at this facility, it could set a pattern.

MR. REED: That is right.

MR. TRAINA: Now, I am concerned, and I express the concern of the Regional Director here, that the Federal Government not participate in this expansion program, unless it is revealed to us that some of these alternatives have been fully explored and that we have a way out with regard to going from 2 to 8 million gallons a day and we are not putting that into an area that may not be able to take that, even with the kinds of treatment you are talking about. I think we need to explore this before we would participate in this kind of program.

MR. PATTON: Let me comment following what you said, Paul.

I think I am not concerned as much with, let's say, going from 2 million to 8 million gallons a day as I am looking at the map on the report here following page 4. If you look at the table on page 4, you will see that the largest percentage increase in population of any of the areas that are shown on this map is in the Black Point area. And it seems to me, unless my guess is completely wrong, that what we are facing sometime in the future, and it may well be before the year 2000, is a solid belt of people in that area stretching from the Miami area right on down to there, and then the question is going to be far more critical, what will we do with the sewage that is generated by this population? I think this is the problem that is bothering Dennis a great deal more than Goulds-Perrine right now.

MR. CARTER: That is right.

MR. PATTON: I think this is where we need to get in and dig in and look and work with them to provide these guidelines of how do we answer this question of where do we try to go, where are we going to try to be in the year 2000.

Am I right, Dennis?

MR. CARTER: That is right, Vince, yes.

MR. WHITE: If I may interject something here, I think this has been a very good discussion, but I don't think we are going to solve this particular problem now. I think we can go into it in depth possibly with the necessary technical staffs at another time.

I would like to make one other comment or ask a question.

Mr. Goode indicated that the practice of the County now was not to issue building permits where a discharge is going to a plant which is currently overloaded. Possibly I missed this in looking through the material, but I see no criteria relating to how you would define an overloaded plant.

MR. GOODE: Let Pete handle that, Dennis. (Laughter.)

MR. WHITE: Would you identify yourself, Mr. Baljet.

PETER P. BALJET, ACTING DIRECTOR
DADE COUNTY POLLUTION CONTROL
MIAMI, FLORIDA

MR. BALJET: Peter Paul Baljet, Dade County's Acting Pollution Control Officer.

Mr. Chairman, we determine the capacities of sewage treatment plants in the following manner:

First of all, there is the design capacity on an average flow, and when the total flow exceeds this capacity then this is already a danger signal. On a monthly basis reports are being submitted to Dade County Pollution Control indicating the efficiency of the particular plant involved. In addition to that, my office will take grab samples for periodic analyses which would parallel those that the operator would do at the plant.

If in all of these reports and in all these samples there is a continuing violation of the Dade County pollution control ordinance or if these reports and our investigations reveal a continuing sad condition as far as plant operation is concerned, then this will determine the plant in question. We will then institute either temporary building moratoriums until the plant is up to par or we will seek other measures to insure that these plants will be brought back into shape.

MR. WHITE: Well, could I ask this? What percent treatment do you consider adequate under your county ordinance?

MR. BALJET: At this time we consider 90 percent treatment adequate.

MR. WHITE: Anything below that you would not issue a permit or you would give it a very severe look?

MR. BALJET: A continuing violation of records indicating a below 90 percent efficiency of sewage treatment plants, this would be considered unsatisfactory.

MR. WHITE: Thank you.

MR. REED: Mr. White, I did want to comment on the unresolved problem which it is agreed is technical and should be discussed at a technical level, but may I make a recommendation that the technical staffs involved in this area, Perrine-Goulds and the problems of waste disposal in the southern part of the county, be brought together, perhaps an interim report given to us at the April meeting and perhaps a more comprehensive report be prepared for a report to the conferees later on.

I think we must give this some action and some emphasis. The county must be given some clear guideline.

MR. WHITE: Well, the point is well taken and I didn't mean to really try to restrict the conversation too much on that point, but I think that is a very good suggestion, Mr. Reed.

Do you have a comment, Mr. Traina?

MR. TRAINA: I just wondered, is the consulting engineer referred to going to look into this situation here as part of his program with you?

MR. CARTER: Yes, he is.

MR. TRAINA: And we will have some engineering facts and figures that we can discuss between now and the April meeting?

MR. CARTER: We will get together with the representatives of the Florida Department of Air & Water Pollution Control and we will work out whatever point you are looking for, yes.

MR. TRAINA: All right.

MR. WHITE: Any other questions?

Well, I would also like to endorse what Mr. Reed said a few minutes ago concerning the Virginia Key plant. It would seem to me to be slightly premature to foreclose any options there before you really start an in-depth working setup into development of the master plan, and I think serious consideration should be given to using this facility if it is at all possible and probably the conferees will address themselves to that in a session and may develop some additional statements to be put in the form of a formal recommendation.

MR. PATTON: Mr. Chairman, I think that I can go beyond that in talking about Virginia Key. If you remember, I got stirred up enough to preach a little sermon about water conservation and reuse yesterday. If I was too lengthy, I apologize, but when you look at this map again that I was referring to a little bit ago, I think that you will find that there are many homes, residences, and other sources of sewage and waste to the west within the city of Miami or to the west of this area and to the south, it seems to me that it almost says go to Virginia Key. Now, perhaps I am being premature, but I am trying to look at it from a logical standpoint and--

MR. REED: Cost.

MR. PATTON: --I think that when you look at the cost and the problems of deep disposal wells, their limitation on volume, I could conceive that possibly we might wind up with many, many drainage wells in this area. And the question arises in my mind what happens if one of these wells plugs, what do you do with the sewage then, do you have that safety factor?

So I think that we have got to take a hard look at it from a technical standpoint.

MR. WHITE: Thank you, Mr. Patton.

I would like to make an additional comment concerning the boat regulations. I think the recommendation as originally adopted by the conferees will possibly need to be amended to take into account the regulations which are currently being developed, and I am sure the conferees will get into this matter.

And I might add also that none of these recommendations are locked into concrete. I mean any time that a reasonable showing is made that something cannot be accomplished, then I am sure that as fair and just people the conferees would be forced to modify the recommendation as necessary.

But I would like to say that I don't think that we are in a position yet to modify any of the deadlines that were established based on what was presented here today. I think that after we go into session we might come out with a statement asking for more definitive coverage of your interim interim plan, if I might characterize it that way.

Are there any other comments?

MR. PATTON: Let me just make one further comment, Mr. Chairman. I don't want to belabor the point.

But I think that the technical committee that was set up as a result of the meeting called by Miami Beach I think on, I believe, the 9th of February should be the first vehicle that starts to try to resolve this whole point in question, many of these questions that have been raised here this morning. I believe Mr. Carter has been designated to bring this group together.

MR. WHITE: Very good.

If there are no further questions, Mr. Reed, proceed.

MR. REED: All right.

We have quite a sizable list of people who wish to speak to the conferees this morning, so I will ask, I do not want to cut anybody down, but I will ask for judicious prudence and to keep one eye on the clock.

We will start with Mr. Garrett Sloan, Director of the Department of Water & Sewers, the city of Miami.

Garrett.

GARRETT SLOAN, DIRECTOR

DEPARTMENT OF WATER & SEWERS

MIAMI, FLORIDA

MR. SLOAN: Mr. White, Mr. Reed, members of the joint conference.

I am very pleased to have this opportunity to try to bring you up to date on what we are doing on behalf of the city of Miami.

First of all, I wanted to tell you that I was very pleased with the results that were reported yesterday by your field survey of the sewage plants. For the period of the survey your report showed 80 percent removal of solids where our reports have been grossly understated at 80 percent, for the entire month of January 80 percent of suspended solids.

Your report showed 79 percent of BOD removal and we had for that short period of time 73 percent and for the entire month of January 68 percent. So we are very pleased that the checkup, so to speak, by the Federal investigators indicated that we are doing a good job.

We are doing a great deal to eliminate the pollution in the interior canals. We are engaged, as you well know, with the West Dade interceptor project, which is a key to relieving a great deal of the pollution in the canals, and in addition to that we have made provisions to take care of the city of Miami Springs, so as their project proceeds we intend to be able to take their sewage and handle it for them.

We, as you know, are concerned with continuing to operate our existing facility at Virginia Key at the best possible efficiency. At the present time we are applying 5,000 pounds a day of chlorine to the effluent before ocean disposal after the treatment that the sewage receives to keep the coliform counts down. We are carrying a great deal of load from many of the overloaded plants on the interior canals in the form of receiving their sludge. I don't know if many of you are aware of the steady stream of trucks up and down Dixie Highway with the name Sun Gold. Anyway, those trucks invariably are carrying their loads to our plant. We are receiving in excess of 100,000 gallons a day of sludge from various plants and, of course, some septic tank sludge.

Among other interests that we have been involved in recently was a joint feasibility study with the city of Miami Beach. We have made a regionalization study at their request. We didn't seek it. They came to us and asked us if we would help and we tried to help in that manner. We certainly have no objection or criticism of Miami Beach seeking to solve their problem in another direction.

For many years we have been the sole water supplier to the beach and naturally we have a long-standing very pleasant relationship with them.

This regionalization study that we did make did bring out some interesting things. It showed that the city of Miami could save approximately $2 million in a joint effort with Miami Beach. It also, I believe, showed Miami Beach that they could save some money compared to other alternatives open to them by tying into our facilities on Virginia Key. Of course we are very much aware of the site limitations there and I think enough has been said about that already.

The department is quite interested in a new technological development in sewage treatment that is being widely publicized at the present time called oxygenation, the use of liquid oxygen. We asked our Water & Sewer Board for approval of an expenditure up to $10,000 at our recent meeting to make a pilot plant on-site investigation of that process, and we will certainly make available to all of the interested consulting engineers and regulatory authorities the results of our study. This new process, which I believe has been sponsored in the research efforts by the Federal Water Quality Administration, does appear to offer very major savings, and, of course, we have to be cautious in the expenditure of public funds, and many new sewage treatment processes in the past have unfortunately not worked out or reached the expectations for which they were developed.

We have one big problem facing us, and that has been touched on by Mr. Patton and others yesterday and today, and that is that we have been asked to investigate the establishment of a brand-new sewage plant at least 10 miles west of our urban area for the purpose of recycling sewage, sewage that has not been contaminated with salt water as is much of the sewage collected from the areas close to tide, such as Miami Beach and downtown Miami. And at the present time we are making some preliminary investigations of that.

However, we have done something else. We have asked the Central and Southern Florida Flood Control District to give us a review of their ideas concerning the need for water resources for the three southeastern counties of the State. We had a conference with them last Thursday, a week ago yesterday, and it appears that if the Corps of Engineers' $80 million project for the raising of Lake Okeechobee by four feet and the back pumping of interior canals proceeds as has been planned, although apparently not adequately financed, that there will be adequate water supply without resorting to recycling of sewage up to the year 2000 for the three southeastern counties here in the State of Florida. However, this is predicated on getting going with these major projects and also it is predicated on the willingness of conservation groups to find ways to solve some of the problems that have come to press and come to light concerning the deer in the conservation areas and possible problems concerning fishing in Lake Okeechobee that might result from raising the water depth there.

We are quite concerned in the city of Miami with the financing of the major expansion that is contemplated, and we are in the process of asking the City Commission for permission to rewrite the sewer trust indenture. The present trust indenture is not amenable to the issuance of additional bonds because of the term bond concept in the financing so that the earliest date of retirement of bonds would be after 1993, and we feel that we could save considerable money and have a much more efficient financing program if we can have the trust indenture rewritten which will require the refunding of approximately 3.7 million of existing outstanding sewer revenue bonds.

We have three questions to pose from a constructive standpoint today that we would like you folks to advise us on as soon as possible. One is will the Federal Water Quality Administration approve grants for recycling plants where there are other more economical alternatives. And I am referring now to this concept of going 10 miles west of the city to establish a new advance type pumping plant. This is something that would be, I think, very vital in our financial studies of that subject.

Another question is should our department, the city of Miami, proceed with definite plans for enlargement of facilities on Virginia Key prior to approval of a County Master Plan. We are very conscious of the fact that a great accent, and very properly so, has been placed on long-range planning by Federal agencies, and of course we want to make the best possible use of the availability of grants. So our question, to repeat it, is should we proceed and apply for grants, and so on, without the November 1 Master Plan being completed. We are in the stage of preparing our budget now for the fiscal year beginning July 1, 1971.

Our third question is a little more far-reaching and that is this. In our dealings with the Federal Water Quality Administration grants organization in Atlanta we find that they appear to be very busy and they are not able to respond promptly to requests. The new Federal guidelines that were promulgated last October will necessarily require a very great additional workload by the Water Quality Administration personnel. I think they realize this and I certainly am very much aware of it.

There is an uncertainty on our part about the dependability of planning on the obtaining of grants. You know, when you are working up a long-range program, you have to make allocations of the sources of funds, and we have been depending on a 33 percent grant level because of Public Law 660 and the type of facilities that we are involved in which we feel are eligible for that type of grant.

However, in our more recent experience we are not at all sure. For instance, our group of projects for the enlargement of Virginia Key rated a priority rating of 62, whereas a one year's allocation of funds could only take from number 1 to number 30 or 31. So here we are way out beyond the amount of money allocated. However, we understand that a review of the first 30 is under way and that many of the projects probably aren't proceeding, so that it will be possible to extend too much further down the priority list.

But this is very real and vital to us who are trying to work out the details and make these things go. We are on the firing line trying to bring into being many of the things that you folks would like to see from a long-range standpoint.

I think that is all of the comments that I had planned to offer. If you have any questions, I will certainly be glad to answer them.

MR. WHITE: Thank you very much, Mr. Sloan.

Mr. Reed.

MR. REED: Why don't you take on the first question, or would you like to?

MR. WHITE: I would like for Mr. Traina, since he is Director of our planning operation. to respond to that.

MR. TRAINA: With regard to whether or not FWQA will participate in grants involving reuse, yes, the answer is yes, we approve them, they are part of our program, and we will be happy to consider that one.

I will respond to question number two unless--

MR. REED: I am going to respond to it too, but I will give you first chance.

MR. TRAINA: Yes. O. K.?

MR. REED: Yes.

MR. TRAINA: Is that succinct enough?

MR. SLOAN: That is very good.

MR. TRAINA: On your last item, I have Mr. Foster here, who is our Director of Facilities. I think, Mr. Sloan, you have worked with him.

Asa, do you have specific comments to make on Mr. Sloan's comments with regard to our planning and facilities program?

ASA FOSTER

DIRECTOR, FACILITIES PROGRAM

EPA - WATER QUALITY OFFICE

ATLANTA, GEORGIA

MR. FOSTER: Mr. Chairman. I am Asa Foster, Director of the Facilities Program in the Water Quality Office, EPA, in Atlanta.

I have recently checked with Mr. Sloan. There has been some delay in responding to his request for consideration of a grant at Virginia Key. This was delayed because of the new planning guidelines and the absence of the metropolitan plan for the metropolitan area. We have this under consideration and will be shortly authorizing advertisement for the project that Mr. Sloan is referring to, which is a provision of a blower, as I understand it, for the Virginia Key plant. This should be forthcoming.

I have no other comment, except I would like to comment for the record that we received Mr. Sloan's letter yesterday, and I think the date of the letter--Mr. Sloan can correct me--was February 16.

MR. SLOAN: Yes. I didn't mean to get into this most recent exchange. I was concerned--

MR. WHITE: If I may, I think that is a little too recent to go into at this point.

And may I make another observation, and possibly get some clarification on it? On item 2. as to whether the city should proceed with the expansion of Virginia Key and whether they would get a plant application or not would, as I understand it, depend on whether or not this is consistent with the interim plan that has been submitted.

MR. FOSTER: This is correct. They have an application on the one-year priority list for an interim improvement and they have not been certified for a grant by the State because they are so low on the priority list, but I am sure that we would consider it and we will have to consider it in light of maybe the interim interim plan, Mr. Chairman, you mentioned earlier.

MR. WHITE: Well, thank you.

Do you have another comment, Mr. Traina?

MR. TRAINA: No, I don't have any. I think we will get a response to you, as Mr. Foster indicated, quickly on this.

MR. WHITE: Mr. Reed has something.

MR. REED: I just wanted to reemphasize something on number two now. We are trying to go forward in Dade County and we can't have any reluctance on the part of the county or of the city to be able to get rapidly together on discussing a plan to be submitted for November 1.

So please, Mr. Sloan, we will tell you right now, the answer is yes, we would like for you to proceed, but proceed with the full knowledge of the county and with them adding to your planning effort their thoughts. Gosh, it wouldn't take me to November 1 to determine the fate of the Virginia Key site. It shouldn't take you that long either, or anybody. You should be able to resolve this.

MR. WHITE: I agree that certain decisions can, in my opinion, be made earlier than November 1st, too, but I think this is a matter that the conferees will have to discuss and we will report back to the full meeting on this.

Are there any other questions or comments, Mr. Sloan?

MR. SLOAN: Yes, on item 3 concerning FWQA's processing of applications, my question really wasn't addressed to the present situation. I am thinking more of the immediate future, because I think we can all anticipate a great flood of activity now of grant after grant application and with the new Federal guidelines a great deal more supporting information is required than has ever been required in the past. It is going to take far more personnel to process this in the proper manner, and I am sure it will be processed in the proper manner.

So I just wanted to raise that not as a question to be answered here today, but to point out that we at our level can see problems ahead if someone isn't doing their proper planning to meet these conditions.

MR. WHITE: The point is well taken.

Do you have a comment, Mr. Traina?

MR. TRAINA: No. We recognize the workload being put on by the regulations and we will respond to them. I would like to reiterate, as Mr. Reed said, let's move ahead; let's not let these regulations and guidelines, or lack of them if that is the case, preclude any action on the part of you folks. I think we have got enough to go with Virginia Key and as far as I am concerned and as far as our Regional Office is concerned we should go with that one.

MR. SLOAN: I want to say that last Thursday a week ago our Water & Sewer Board received our preliminary budget for major expansions on Virginia Key prepared by our staff and this has been our plan, but we certainly felt we should try to ask the proper questions here today to clear it up. But we have every intention of moving right along with this to the best of our ability.

Thank you.

MR. REED: One last thing, Mr. Sloan. I did want to reemphasize what I said earlier about where transmission lines are existing. I think it is incumbent upon the city to come up with an action plan to tie in areas that are on septic tanks to those existing transmission lines. We don't want to dodge that one. I don't want to leave that one unmentioned again.

MR. SLOAN: Yes.

MR. WHITE: Is that clear?

MR. SLOAN: Yes, we understand.

MR. WHITE: Thank you very much, Mr. Sloan.

Mr. Reed, you may proceed.

MR. REED: Mr. James Albert, Vice Chairman, Metro Water & Sewer Authority.

MR. ALBERT: Gentlemen, I defer to your next speaker. It is not necessary for me to make an appearance at this time.

MR. REED: All right, thank you, Mr. Albert.

Going down this, I have now Ken Quina, Consulting Engineer, Dade County Drainage Contractors Association, Coral Gables.

KEN QUINA, CONSULTING ENGINEER

DADE COUNTY DRAINAGE CONTRACTORS ASSOCIATION

CORAL GABLES, FLORIDA

MR. QUINA: My name is Ken Quina, and I am representing the Dade County Drainage Contractors Association. This is the septic tank industry here in south Florida.

The program that has been presented to you by the county assumes that Dade County has an infinite supply of water. If this were true, really, you wouldn't be here today because we would have the water to dilute the sewage used here in Dade County.

The program that is being offered to you is a program of extending force mains westward across the county and connecting to these force mains all of the existing sewage treatment plants that are dumping into the waters of Dade County. These sewage treatment plants of Dade County then would be connected to the force mains that extend eastward and dump into the ocean, wasting the fresh waters of Dade County into the ocean.

The present programs are assuming that the waterways of Dade County are polluted and that the salinity dams that are protecting our canals from salt water encroachment have a continual flow across the salinity dams. Now, we are using daily average flows here, which does not apply to Dade County. Now for the past several months and for the next few months these salinity dams will be closed.

Your report that was presented at the October meeting shows that the waterways of Dade County, with the exception of the Miami River, are polluted and that they are polluted at sewage treatment plant outfalls; they improve a ways; they are polluted again at wide spots in canals such as lakes or inner sections of canals; they are polluted again at salinity dams. This to me implies **basically** that we are not talking of fecal contamination, because if it were polluted from fecal contamination, as we went down the canal and passed through the septic tank areas of Dade County they would have picked up in pollution according to all theories presented. This is not the case; they do improve.

Basically the cause of pollution here is that these wide spots in these salinity dams are places where debris is settling; it is settling; it is fermenting; it is forming the fertilizer necessary to cause the growth in canals that is causing the blocking out of sunlight and, of course, killing the plant life below. The rotting of this vegetation is giving you your low oxygen count; it is giving you your high E. coli count, and gives us an indication of pollution that really is not as bad as indicated. You do get an improvement from a sewage treatment plant.

The program that is outlined takes our water and no longer dumps it into the waterways. Therefore, we will have more stagnation. Our dams will have to be closed more. We will have more scum layers on canals. We will have more indication that the canals and waterways of Dade County are polluted. They are polluted and many of the plants here are very bad. Certain sections of them are really miserable to get in in a boat, but other sections of the waterways of Dade County are not near so bad and they are filled with fresh water.

The sewering of North Dade by the process of tying in communities to force mains in Dade County has resulted in sea water encroachment to a very serious extent. The city of North Miami Beach last summer had to abandon three of its wells because of salt water encroachment. Just last January they had to abandon 17 others. They have had to abandon all 17 of their wells due to, they claim, sea water encroachment and septic tanks. Well, we know which of the two makes the water not usable.

Basically, I feel that the septic tanks of Dade County do serve a very useful purpose, they do recycle the waters of Dade County. They may be bad, but, one, there has never been one case of disease ever attributed to the septic tank, not one. They do recycle our water. The water from a septic tank does add nutrients to the ground, no question, but there it is used for watering lawns and it keeps growth in lawns rather than in canals.

Septic tanks have been the backbone of development in our country. Two out of three buildings built in this county today, and really across the country, are built on septic tanks. They are really the necessary stopgap between early development and the population density that would require and support a sewage system.

I wish that you would very carefully look at both septic tanks and the program offered by our county which, in my mind, wastes the waters of Dade County and presents a much more serious problem of pollution and that is salt water encroachment.

MR. REED: Thank you, Mr. Quina.

Commissioner Gordon.

ALEX GORDON

COUNTY COMMISSIONER

DADE COUNTY,FLORIDA

MR. GORDON: Thank you very much, Mr. Chairman, and gentlemen. I appreciate this opportunity to appear before you, very briefly, I hope.

Let me say my name is Alex Gordon. I am a member of the Dade County Metropolitan Commission, have been a member of that Commission since its inception in 1958. I am the oldest in point of service and chronologically, both.

A. Gordon

I would not like the complete record of these conferences, as I have read the proceedings in the press, to be without comment on the proposition of what has Dade County through its County Commission done or not done over the years in the pollution control field. I at least have been receiving what to my mind, in my judgment, has been a rather distorted picture, which comes out something to the effect that Dade County and its government has not been doing and would not be doing anything in the antipollution field except for the prodding of Nat Reed and his fine organization or that of the Federal Government. Gentlemen, this is not correct, and I think that the picture ought to be given some balance.

I think it is a safe statement to say that Dade County was the first county in Florida and one of the first in the United States to concern itself about pollution and this was long before it became the popular cry of the day. We adopted an anti-pollution ordinance, I believe, when I was chairman of this Commission in 1963 or 1964 which at the time was considered the most stringent pollution control ordinance in the United States, not discounting that of Los Angeles County. It was adopted after very strenuous objection and after multiple hearings. We prohibited, and we are amongst the first to prohibit, hard detergents and had outcrys and delegations from the soap industry visiting us. We set higher air pollution or more air pollution standards than were then current in Los Angeles County.

Certainly there was a great deal to be done between then and now. We have tried with our limited resources not only to stay abreast of our problems but to try to anticipate them, and in that effort we have tried with might and main to work out a unified sewage system for Dade County, keeping in mind that we have 27 separate municipalities, who are within their little bailiwicks, sovereign.

We have made some progress. With your assistance I think we can get the job done. It needs to be done. But I do believe that the picture needs balancing. We may be remiss, and we would want you to point out where we have been remiss, but we have been trying.

Thank you, Mr. Chairman.

MR. REED: Thank you, Commissioner Gordon.

I think I would just like to add my voice to getting this very, very straight. The Chairman of the Department and the Executive Director of the Department recognizes the acute awareness of the County Commissioner of Dade County and the County management of Dade County in addressing themselves to this problem, and I give high points to the background and the years of effort that have been made by Commissioner Gordon and his fellow Commissioners in this field. I think this is wonderful.

I am glad to get this historical note in the record.

MR. GORDON: May I add one thing, Mr. Chairman?

MR. REED: Yes, sir.

MR. GORDON: And that was with respect to the point made by the last speaker. Now, I am a layman and all of us on the County Commission are with respect to pollution control. We have asked for authoritative scientific background and basis for the elimination of septic tanks. Of course you know we are on a program to do so, but up to this point, speaking for myself alone, I have nothing to back that up when I go out and talk to civic organizations and civic people and contractors' groups, and so forth. I just don't have it. And it is true that this county has been developed largely on septic tanks. It is true that if the people who are on septic tanks working very well who have had no problems in 20 years with their septic tanks are required to expend hundreds, in some cases thousands, of dollars to connect with a sewage line, we have got to give them the reason. Please give it to us.

MR. REED: I think that can be made available to you. It is not lightly documented.

MR. TRAINA: I would just like to add one comment. I think the October report, the technical report,presented showed that you have some problems in your canals that are obviously due to some of your septic tank areas. I think this has been a situation as we have documented Dade County and other areas.

MR. GORDON: I think if we pinpointed the Dade County conditions it would be very helpful to us.

MR. WHITE: I would like to add a comment, too, Commissioner Gordon. Inevitably it seems people are being put on the spot in proceedings such as this in an accusatory manner, and certainly this is not what we are trying to do. We are simply trying to identify the problem and get some approaches to the solution of the problem that are mutually satisfactory to the local government, the State government and the Federal Government.

And I might add that although I am sure you feel singled out here, that we have many major metropolitan areas around the country that have not the identical situation but a very acute pollution problem, and if anyone is guilty in this probably it is the general public as a whole for years and years of past neglect. But a new day has dawned on us and we are more concerned in the protection of the environment, and I think that many areas are simply victims of circumstances in this respect.

MR. REED: Mr. Chairman, I would like to declare a five-minute recess until the hour of 11:15 and the first speaker will be Mr. Pearson from the City Manager of Homestead.

MR. WHITE: Very good. We stand in recess until 11:15.

(RECESS)

MR. WHITE: If I might have your attention, please, we would like to move right along with this conference. We have quite a few people who have indicated they would like to make a statement. And we would like to proceed as rapidly as possible.

Would you kindly take your seats, please.

MR. REED: All right.

Mr. Chairman, Mr. Pearson is the next speaker.

OLAF PEARSON

CITY MANAGER

HOMESTEAD, FLORIDA

MR. PEARSON: Mr. Chairman, I am Olaf Pearson, City Manager of the city of Homestead.

Yesterday when I had the opportunity of appearing before you, I had a lot I really didn't intend to speak, but certain questions did arise that I took back to my Mayor and Councilmen and they directed me to come here again this morning and raise similar questions.

We have concern, as you know, relative to our applications, the pre-application information is now being filed for the construction and expansion of a sewage treatment plant that would handle the entire city of Homestead, its environs, as well as our adjacent city, who is without sewage service, that of Florida City. We are faced then with processing the application first through Dade County, secondly through the State, and third and finally up to the Federal agency.

We feel that this, from what we learned yesterday with the cessation of any disposal into the canal system by 1973, is perhaps an academic exercise simply because in the design of the plant the direction that the engineer has to be given if we are going into third stage treatment, tertiary as it is called and I still don't know what that means, and I am not sure anybody else does - but if tertiary treatment simply calls for the removal of nitrates and phosphates, fine, tell us which and how much. If we can be permitted to go with a stage construction, the question of recycling water is one that I don't believe has been really investigated to the extent that we would be prepared to go into it. If we are talking about deep well injection with tertiary treatment, we would like to know that, and if it can be given to us then we can proceed.

We are faced with, as you well know, the April deadline date for an application for any assistance. We want to clean up our waters. We want to serve our people. We have a number on septic tanks. And again we aren't too sure of which way to go.

I am told by other people that I talked with since yesterday that they likewise are not too sure of what is requested in the third stage. I heard the county say that they had a treatment plant that has capabilities beyond which it now is using or will use, and I don't believe they know which way to go after they get the plant done. As a matter of fact, Homestead was sitting down there looking at newspaper articles by the county and saying, well, if the county is going to build a plant and dump into a canal, how is the county going to stop Homestead from building a plant and dumping into a canal

We are interested in cooperating with the county, we wish to cooperate with them, and we want to clean up the situation. But I would like to know, if I can, at this time does tertiary treatment simply mean the removal of nitrates and phosphates, does it mean something more? Can we have a guideline upon which to direct the engineer on which the engineer can rely that will be constant, not just today but in 1973? We would be most interested in knowing this.

MR. REED: Mr. Pearson, I am not going to give you a reply today, but I will give you my promise that you will receive a reply and a course of action and a course of direction in the very immediate future.

MR. PEARSON: May I ask one question, Mr. Reed?

Will that information be available in sufficient time that we can proceed with our application to you?

MR. REED: Yes.

MR. PEARSON: Thank you.

MR. REED: Mr. Henry Gallart, Chemical Engineer, Pollution Treatment Corporation, Miami.

HENRY GALLART, CHEMICAL ENGINEER

POLLUTION TREATMENT CORPORATION

MIAMI, FLORIDA

MR. GALLART: Mr. Chairman, Board members, conferees, ladies and gentlemen.

My name is Henry Gallart. I am a Chemical Engineer with Pollution Treatment Corporation of Miami, Florida.

From yesterday's testimony on the performance of effluents meeting the standards set by the State of Florida, it was clear to me that many plants do not achieve the 90 percent removal of BOD and suspended solids. The effects of pollution upon our lives is catastrophic and all of you sitting here are aware of the full implications.

Many present systems use chlorine which leaves a chemical residual in the effluent and in fact adds to pollution of our water. Chlorine is hazardous to transport and to handle. In addition, it is not effective against many types of bacteria and most viruses. These effluents contaminate streams, canals, and other water bodies into which they are dumped.

A new method of tertiary treatment can now eliminate the problems of the past. This method is ozonation or activated oxygen. Government tests have shown that ozone destroys pathogenic organisms such as viruses and bacteria whereas chlorine was ineffective. In April 9, 1969, a report to the United States Department of the Interior stated, and I quote from page 5:

> "the use of ozone for tertiary treatment of secondary effluent has proven to be economically effective. Treatment of actual effluents from the Totowa, New Jersey, and Berkeley, New Jersey, trickling filter waste treatment plants by ozone resulted in a product that met the Public Health Service requirements for potable water. Virtually all color, odor and turbidity were removed; and oxygen-consuming materials, measured as COD (chemical oxygen demand), were reduced to acceptable levels, that is below 15 milligrams per liter. Bacteriological tests showed that no live organisms remained; and surface-active detergents, which can cause foaming, were removed. Ozone concentrations from 11 to 48 milligrams per liter in oxygen proved equally effective."

Furthermore, the systems economics compared favorably with the existing methods. I quote from the same report, on page 7:

> "Economic evaluations of ozone treatment of secondary effluents indicate that ozone treatment is competitive with activated carbon systems...."

Effluent water from an ozonated system will upgrade the stream, lake or canal into which it flows, introducing considerable amounts of air or oxygen into it, thus increasing the dissolved oxygen content.

Ozone thus helps the ecology. It can also eliminate odors associated with sewage and is thus useful in sewage lift stations. Our affiliated companies have successfully installed ozonation systems for potable water bottling plants owned by Canada Dry, Schwepps, Foremost, McKesson, and others. We have also solved odor and effluent problems for meat rendering plants.

Extensive research on the treatment of sewage has been done at the R. A. Taft Water Research Center of the Environmental Protection Agency. As a result of their laboratory work, a pilot plant was designed and built at Blue Plains, Washington, D. C., and went into operation on January 15, 1971. Mr. Dolloff F. Bishop, its director, is very confident that it will be a major contribution to progress in sewage control. His group will report on their laboratory studies and pilot plant data at the American Institute of Chemical Engineers meeting in Houston, Texas, on March 1, 1971.

Another pilot sewage plant is being built in Greenwich, Connecticut. This plant will use ozone as the third stage to reduce BOD (biochemical oxygen demand) and COD (chemical oxygen demand) to the accepted point. This plant was built and designed by Dorr-Oliver, who may also report on its operation at the Houston meeting of the American Institute of Chemical Engineers.

And now, gentlemen, I will leave you with just one single question: If drinking water is purified by ozone, why not the sewage systems in the State of Florida?

I thank you.

MR. REED: Thank you, Mr. Gallart. I am sure your comments will be taken with great seriousness by the consulting engineers and the County Manager's Office. Thank you, sir.

MR. GALLART: Thank you.

MR. REED: Mr. T. Brill, Ecological Representative, Highland Lakes Association. Mr. or Miss Brill?

Charles Lee, Director Audubon Society, Miami.

Alice, good morning.

MRS. WAINWRIGHT: Good morning, Nat.

Mrs. A. Wainwright

MRS. ALICE WAINWRIGHT

PRESIDENT, TROPICAL AUDUBON SOCIETY

MIAMI, FLORIDA

MRS. WAINWRIGHT: Mr. Chairman, conferees. My name is Alice Wainwright, speaking as a representative of the National Audubon Society and as President of the Tropical Audubon Society.

I was very much interested in the comments made by you, Mr. Reed, in reference to Virginia Key, and I would like the record to reflect that the Audubon Society was concerned by the proposal to limit the expansion of that plant by an arbitrary fence line. We thereupon sent telegrams to each Commissioner and we also urged the Chamber of Commerce environmental study group, of which I am a member, to pass a resolution asking that there be no arbitrary boundary lines determined until further studies. It is apparent to us that to meet the contractual obligations of the city of Miami in reference to the effluent treatment of Coral Gables and the western portion of the city of Miami some plant expansion is necessary, because you can't wait forever for the construction of other plants.

I think there were other factors that were involved, I might say, in that fence line, and I have a great respect for Mr. Garrett Sloan, if he is still here, and I think he was a little limited in his explanation.

I want to also say that Tropical Audubon Society, and consequently the National Audubon Society, completely supports Commissioner Greene's boat ordinance and we congratulate him for his leadership in this matter. Two years ago the Audubon Society supported the North Bay Village ordinance and we are now very happy that Commissioner Greene has come along with this particular ordinance and I hope that it will not be reduced in its effectiveness. I think if anybody fell overboard at Dinner Key they would be in dire danger of suffering from a drastic ailment of some kind. That is not for Chamber of Commerce publicity, I might say. (Laughter.)

I am going to conclude my remarks because I am going to introduce to you to speak on our behalf a member of our Board who has been keeping in touch with the pollution problems of Dade County. Mr. Lee is a very competent young man that has a great career ahead of him as an ecologist and we are very happy to have a young person such as Mr. Lee serving with us. I say that many of us old people will be underground when some of these problems are finally decided, and really the future of our country, speaking ecologically, depends upon the young people.

So in Audubon we are most happy to have their participation and I am going to now present to you one of our able young Board members, Mr. Lee.

MR. REED: Thank you, Mrs. Wainwright.

CHARLES LEE, DIRECTOR
TROPICAL AUDUBON SOCIETY
MIAMI, FLORIDA

MR. LEE: Thank you, Mrs. Wainwright.

I think that I can try to keep my remarks here today as brief as possible and keep them as succinctly on the point as possible as well. We are going to have to make one general overview that I think is kind of pleasing and is a good thing to say at this time and that is that the county's commitment today seems to stand much improved from its commitment to sewage treatment in the past. We have always had a commitment here, as Mr. Gordon has pointed out, but I don't think that it has been sufficient yet. It is still not completely sufficient, but it is greatly improved and I think we owe a great deal in this area not only to Commissioner Greene, who has taken a forward stand on this boat ordinance, but also to one person in particular and that is Mr. Pete Baljet of the Pollution Control Department.

I think that one general recommendation that we would make at this time was made yesterday by Mr. Jim Redford of the Izaak Walton League and that is that Mr. Baljet be given complete State authority to enforce the State pollution control laws. I think that this would be a great assist in his effort to clean up the county in terms of pollution.

But there are a couple of things about the county's attitude at this conference and as expressed in its report that more or less disturb us, and there is one in particular. There seems to be an attempt in general to shift the responsibility for cleaning up Dade County's pollution mess from the county to the Federal Government and there seems to be some evidence of this expressed in the report, and I will read to you a brief paragraph that I think expresses this well.

In the first area of the report, known as The Problem, it states:

> "Existing sewage disposal plants are substantially affected by current extreme emphasis on preservation of the existing ecological systems in the Everglades, in the recently established Biscayne Monument in Lower Biscayne Bay, and by the increasingly rigid standards imposed by State and Federal agencies."

And then the report goes on to say in numerous instances, in reference to complying with the timetables scheduled by the conference, that in effect, and I quote, in numerous areas:

> "This objective will, however, be assigned the highest priority and will be completed as soon as practicable, subject only to limitations imposed

by fund availability, available construction capability, and an appreciable extent by availability of State and Federal assistance."

And while I think that the need for Federal and State assistance here is great, nonetheless I don't think that the county should be in the position of shifting the burden of initial responsibility away from itself in this area.

And now under the second point I would like to make and that is that there are two areas in which there are still some unclear problems in the report. The first one is the area of watercraft sewage. Now, we will note that Commissioner Greene's ordinance has been submitted; there appears to be some action on the State level and on the Federal level on similar ordinances; but there seems to be also considerable opposition in Dade County and on the Metro Commission, perhaps, to Commissioner Greene's ordinance, and in this case I don't really think until this ordinance is passed we can consider it county policy.

And the second point that I would like to make is that the county seems to need administrative assistance in designing and implementing the sewage master plan and there are several areas in which the county appears to need this assistance. Generally it is our position that the State and Federal Government should step by step monitor the development of a master plan. It shouldn't be an area which would wait until November 1, a date almost a year away, and then find that we have a plan which may not be completely adequate. It should be monitored in the interim with perhaps some more interim meetings scheduled between now and that date.

Secondly, there are specific areas in which development pressure is hampering long-range development, and in these areas we believe that a federally-assisted boating and occupancy moratorium program would help Mr. Baljet keep this problem in control and concomitantly help the development of the master plan. There are some specific areas that we would like to outline.

We are not in favor of a general building moratorium. We are in favor of moratoriums where it will aid the development of this plan. The first is that we believe there should be a federally or State assisted building moratorium and occupancy permit moratorium on Miami Beach. I think that until we have the problem in control there that this area of very rapid high density growth needs to be controlled if we are in anticipation of getting out ahead of the problem and rendering it not a problem in the future at all.

The second area where we believe there should be an extended building moratorium is that Federal and State authorities should monitor building and occupancy permit moratoriums in the subdivisions and utility service areas that have been listed in the county report as presented. Now, presently they are subject to building permit holds, but there seems to be considerable development pressure against the Pollution Control Department in some particular areas. The areas that we seem to think that there is such pressure are enumerated thusly.

We find, first of all, in the Westwood Lakes area there seems to be a problem, in the area of the Myrtle Grove plant there seems to be a problem, the area of Carol City Utilities. There are other areas as well that a building moratorium on the county doesn't seem to be sufficient, and those areas are particularly the Sweetwater district.

Now, if the Federal and State conference plans are to become effective, we are going to have to have building and occupancy permit holds generally applied in, first, areas where existing plants are going to have to be phased out to meet the 1973 deadlines for elimination of waste discharges into inland canals, and secondly, and I think most important of all, in any area that in the county, State or Federal Government's judgment will not meet conference requirements by stipulated deadlines.

And in particular in this sense I would like to refer to the Perrine-Goulds treatment plant. There seems to be some doubt, at least indicated in the text of the county report, as to exactly what the county's policy on this will be. I would like to refer to that report briefly and hope to point this out in the text of the report.

C. Lee

They state that:

> "Alternative plans for sewage disposal will be considered in subsequent sewage planning."

Then they go on to state:

> "It is contemplated however, that there will be no change of present plans to complete, operate and maintain the Goulds-Perrine tertiary waste treatment plant now under construction."

They state that the facilities have been approved by all authorities having jurisdiction for the first two million gallon per day stage of an eight million gallon per day complete sewage treatment system.

It would appear to me that by this statement in effect what they are stating is that they are not going to meet the 1973 deadline in this area on that two million gallons per day of sewage and that any alternative plans would be concomitant on State and Federal assistance. I think that we have got a problem in this area. I think that this is an area particularly that a building permit hold should be considered. By the county's figures, as outlined in the 1961 master plan, the area is predicted to include approximately 410,000 people by the year 2000. It is an area of extremely rapid growth, as county officials pointed out today. A building hold in this area is eminently important.

C. Lee

And now on to our third and final area of discussion and that is long-range objectives of the sewage treatment program. We have heard discussion back and forth about septic tanks, about ground water recharge, about ground injection, deep well injection, and recycling, and yet really all these terms remain pretty much undefined in an area of very nebulous discussion.

First of all, in reference to the term recycling. We find that there are many unknown factors about recycling, many things that we are going to have to consider in the long run. The balance of nutrients in something that is recycled into canals, particularly into conservation areas such as the Everglades, is something that is a very, very delicate thing. Nutrients can be too high, but they can be too low as well. I think that when we consider recycling we are going to have to consider it on a long-range basis.

And to that we find that a major consideration of the master plan in general should be initiation of active research and pilot projects in recycling to determine exactly the effects. We shouldn't talk about it if we don't know what it means.

And the second point is that there have been considerable references both today and yesterday and at previous times about the use of deep well injection as perhaps an interim method of removing wastewaters from canals where discharges must be stopped by 1973. I would like to refer in this instance to the fact that the effects of a large expanded program of injection in Florida geological conditions are largely unknown and experiences in other areas of the country, notably California, have shown that the deep well proposal has very serious problems, namely will wells plug up after a certain period of time and be no longer effective, requiring considerable amount of money to reopen them.

And secondly, if we are going to consider this at all as an interim method it should be just that and it should be stipulated in the master plan if we are going to talk about the interim use of injection to solve this 1973 deadline problem that it is just that, an interim, and it should be employed to meet the deadline and the deadline only and after that plans should subsequently move on to recycling. We shouldn't get ourselves into an area where we have a built-in roadblock to moving on to recycling in the future.

In general, the county's approach to the sewage problem is much improved and again I would like to compliment Mr. Baljet and Mr. Greene for their work in this area.

Thank you very much.

MR. REED: Mr. Lee, I would like to confirm what I said yesterday in the terms of the deep well. I don't look upon it as an ultimate solution, but I do look upon it as a progressive step to separate man from his immediate waste problems. But the point is well taken on recycling and I think we do have the Perrine-Goulds plant there where a demonstration grant procedure could be rapidly worked out which would be of mutual benefit to the State, because Palm Beach and Broward Counties both face this same problem, and to the Federal Government and to Dade County. I am most appreciative of your very clear remarks.

Are there any questions of Mr. Lee?

MR. PATTON: I have a couple of comments, Mr. Reed. I think that I would like to bring out for the record that the Board of the Department of Air & Water Pollution Control did establish a policy on drainage and deep wells. This is under date of May 11, 1970. It is, I think, fairly definitive as to the steps that should be taken if you are going in this direction, and I think it would cover a situation such as that with which you are concerned, Mr. Lee.

I think you brought out another point that will undoubtedly play a part in the fact that we may have to accept certain interim solutions, recognizing them as interim.

And lastly, I think that we have stated that we intend to work very closely with the county personnel and the city personnel and everybody involved to provide assistance there so that we don't suddenly arrive at a point in time, namely November 1 of this year, and then say,"Boys, we can't accept this. Now. throw this out and start over again." I think by the same token the EPA personnel here have indicated similarly that they will be glad to work in developing this.

We are interested in providing solutions as rapidly as possible and we think this is the only way to really accomplish it.

MR. REED: I just want to add to that that the focus of this conference and the focus since the October conference has been one of mutual trust and faith. We are walking together in this path and this is essential to the successful solution of the problems in Dade County.

I must focus my attention of faith in the County Manager's Office and at the County Commission level. These are honorable men and we are going to stay right together with them, not in the sense of nitpicking but in the sense of genuine cooperation. I hope we will be deeply involved in the master plan on a step-by-step basis, arriving at a conclusive plan on November 1

MR. LEE: Your comments are very reassuring. This is what is needed to make this entire measure effective.

MR. WHITE: I would like to add one comment with respect to the deep wells.

I think in the event that this does prove to be a measure which is recommended as an interim type solution, as Mr. Reed indicated, it would have to be substantiated by much evidence and the best engineering reports that we could gather under the circumstances to verify that this program would operate.

MR. REED: Agreed.

MR. LEE: Right. And that along with stipulating particularly that it was at that time an interim solution, I think this would solve the problem completelv.

MR. WHITE: Right.

MR. REED: Very good.

Is Jean Evoy going to speak today for National Audubon as well?

MRS. WAINWRIGHT: Mr. Chairman, she is not able to be here, so we have covered the Audubon position.

MR. REED: Thank you very much.

MRS. WAINWRIGHT: Thank you for the courtesy in letting us appear.

MR. REED: Thank you, ma'am.

Mr. Meyer Sherman, Past President Sky Lake-Highland Lake Homeowners Association.

MEYER SHERMAN, PAST PRESIDENT

SKY LAKE-HIGHLAND LAKE HOMEOWNERS ASSOCIATION

MIAMI, FLORIDA

MR. SHERMAN: Good morning, Mr. Chairman, members, conferees.

There has been much said about the existing problems of pollution, but not a great deal said about prevention of future problems, which I am sure everyone would agree are equally if not more important. It is one thing to clear up a mess that we might have and another thing to prevent future messes.

I refer to the Department of Transportation State Job Number 87000-1507.

Forgive me, I think I should state for the record that my name is Meyer Sherman. I reside at 19901 N.E. 21st Avenue, and I am here in behalf of the Sky Lake-Highland Lake Homeowners Association and also as a concerned individual resident.

This State job number is one that is considering three alternate routes to establish a corridor alignment for the proposed North Dade Expressway. I would like to enter for the record a map and diagram prepared by the Department of Transportation that I think in reviewing the notes of this hearing will enable you members to have a clearer picture and a clearer understanding.

MR. WHITE: Without objection this will be entered into the record, but I would observe that you have a colored map and we reproduce in black and white and something might be lost, but I think the--

MR. SHERMAN: If that be the case, if there should be a problem, we could certainly furnish you with some black and white sketches.

(Which said map follows:)

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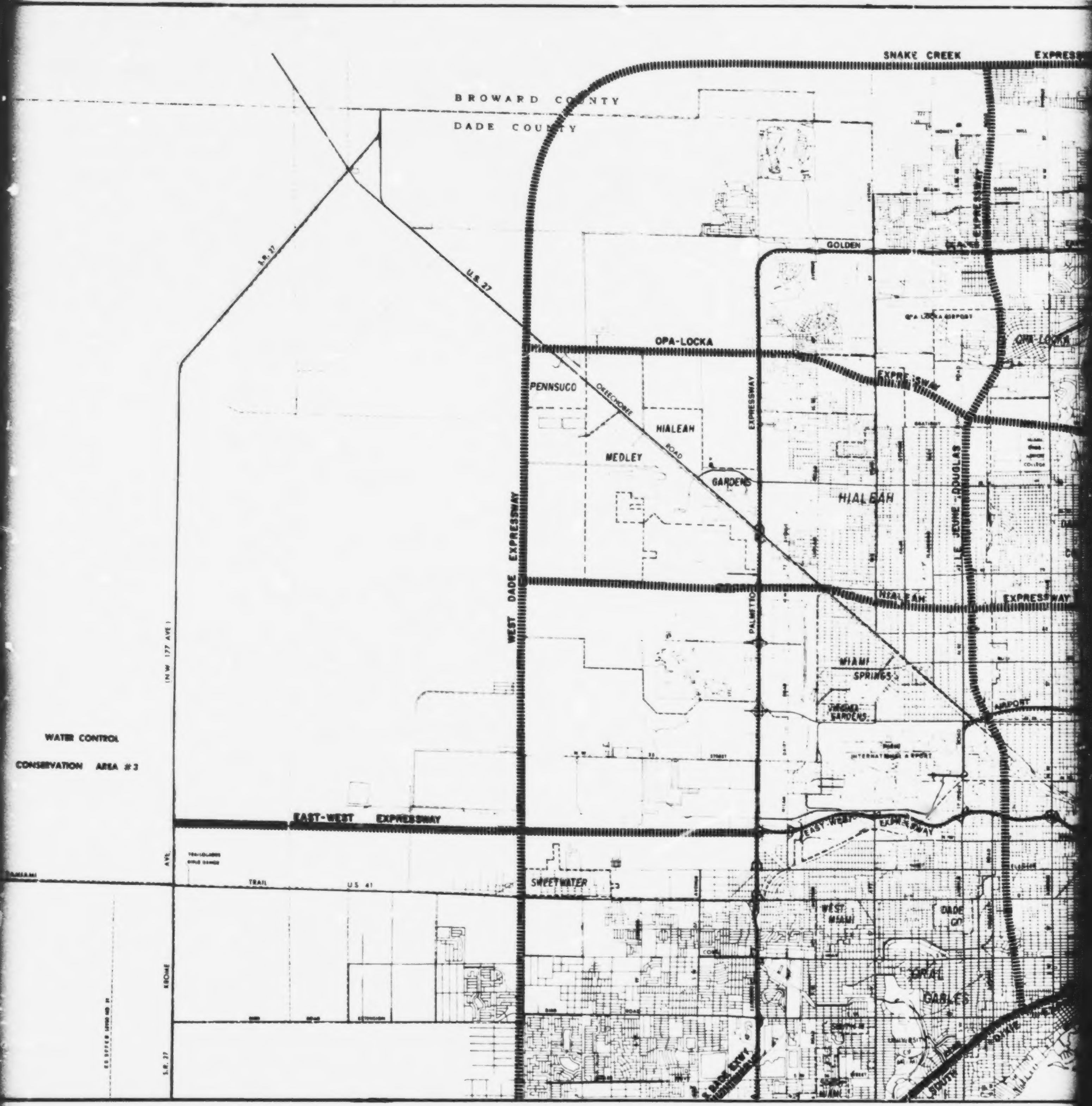

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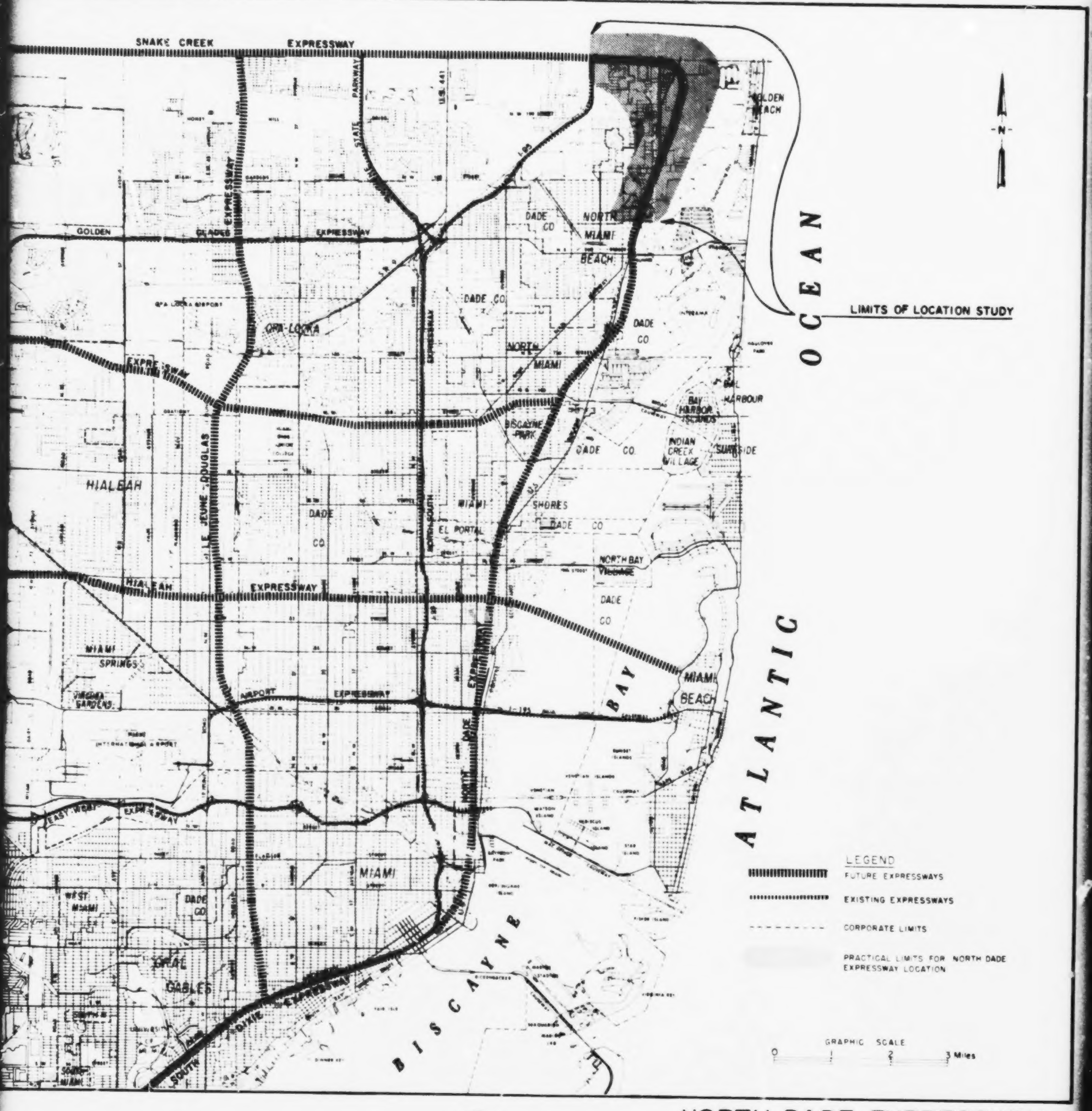

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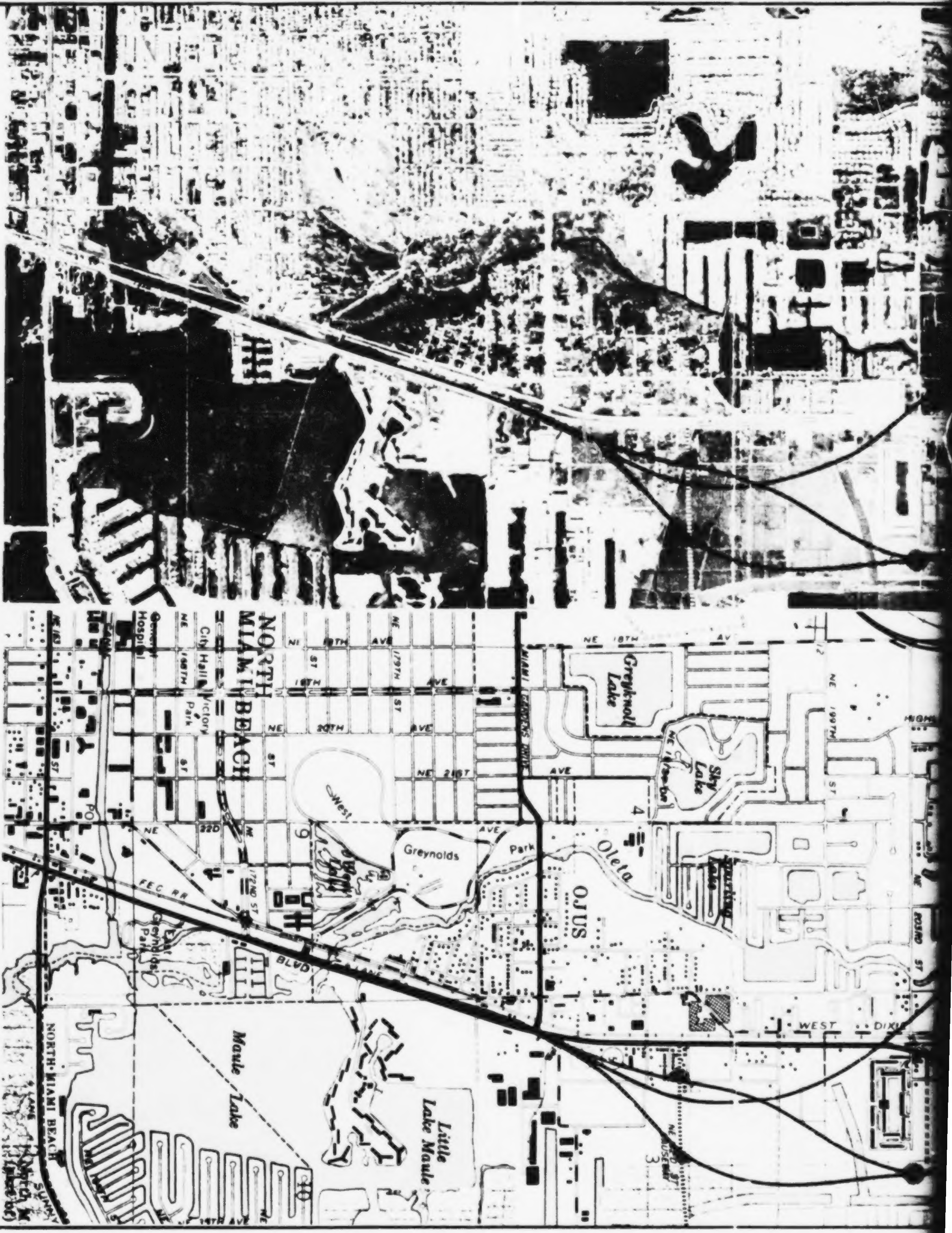
NORTH DADE EXPRESSWAY

NORTH DADE COUNTY EXPRESSWAY SYSTEM



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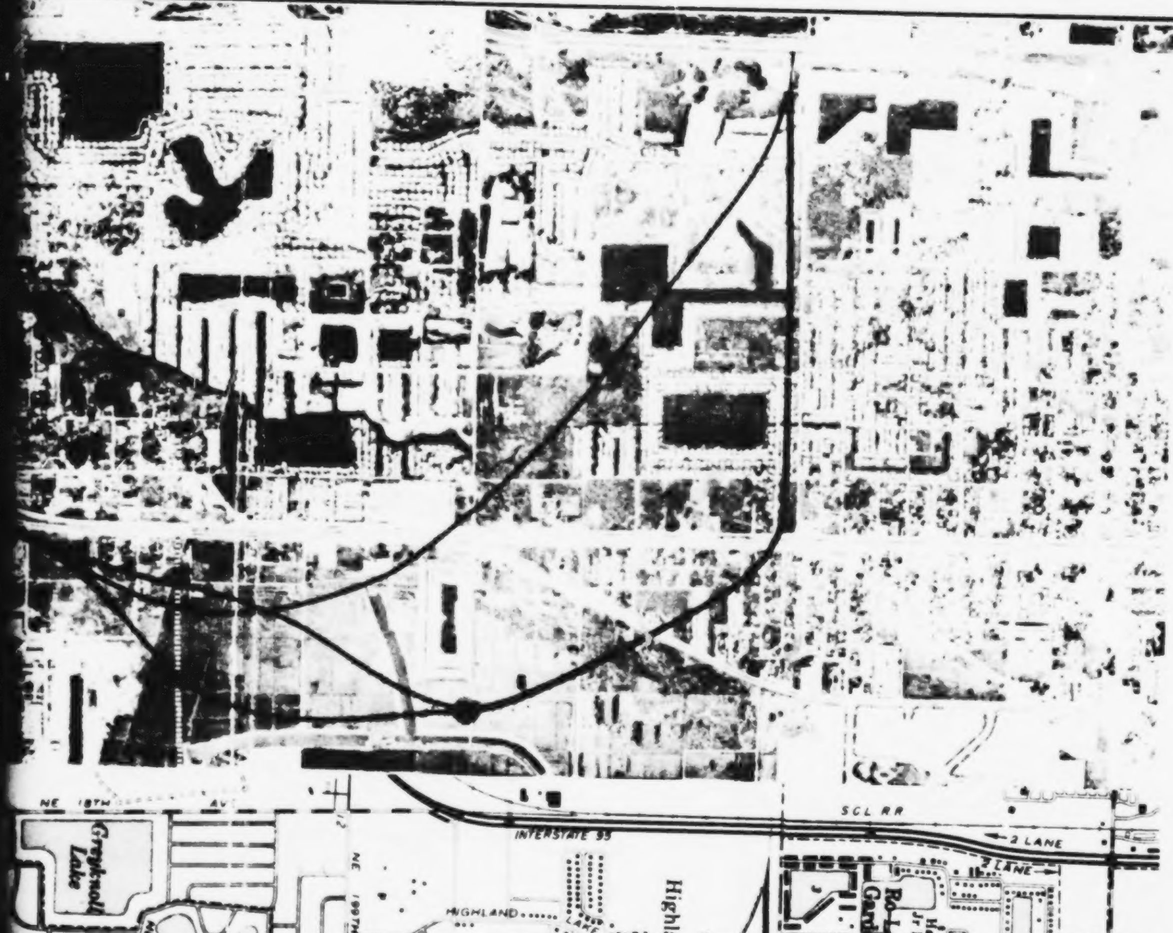

LEGEND

ALTERNATE ALINEMENTS

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NORTH DADE EXPRESSWAY

ALTERNATE ROUTE LOCATIONS

MR. REED: Mr. Sherman, for my edification, is this lake a meandered lake?

MR. SHERMAN: By that, sir, I am not sure exactly what you mean.

MR. REED: Well, the differentiation between a meandered lake and a nonmeandered lake is whether it shows in the government surveys when Dade County was surveyed in the nineteenth century. In other words, a meandered lake, sir, belongs to the State of Florida and a nonmeandered lake belongs to the property owners. Do you know whether this lake is a meandered lake?

MR. SHERMAN: I honestly do not know that, sir.

MR. REED: If it is a meandered lake, there is a well enunciated State policy on building and constructing roads across it.

MR. BALJET: Mr. Reed--

MR. SHERMAN: I don't think it is.

MR. BALJET: --this particular lake is a manmade lake.

MR. REED: A manmade lake. Then it is definitely not a meandered lake. All right.

MR. SHERMAN: As I said, if you cannot reproduce that, there will be no problem in getting black and white maps for reproduction purposes.

MR. REED: Thank you.

MR. SHERMAN: One of the three alternates, which is referred to as alternated on this map, and at a public hearing which was held by the Department of Transportation on January 13 at the city of North Miami Beach City Hall, would locate the connector road on a route crossing directly over what is known as Highland Lake, which would result in broad ranges of consequences. It presently is one of the few last remaining non-polluted lakes. There are fish in this lake. It is used for sailing and boating. There are some 26 homes on this lake and the construction and future development of additional homes is being held up pending the connector road location--

MR. REED: Mr. Sherman, I am going to again interrupt you.

MR. SHERMAN: Yes, sir.

MR. REED: The disposition of a road, especially a road which requires any Federal contribution, which this road obviously does, is well covered under the Department of Transportation Chapter 4(F), which is coordinated with with the Bureau of Outdoor Recreation for pertinent objection by State and Federal organizations on alignment procedure.

I think it is beyond the purview of this conference and I do believe the proper approach is to file an objection under the provisions of Chapter 4(F). These are common, there are some 30 or 40 objections to routing already in the State of Florida, and the Department of Transportation, Federal as well as State, is under legal requirements to resolve that problem and if it is unable to be resolved it must go to the Secretary of the Interior and to the Secretary of Transportation in Washington, D. C., to be resolved.

I do believe, sir, that it is beyond the influence of the conferees and that there is a definite course of action laid down by the law which is applicable in your case.

MR. SHERMAN: This would be with direct regard to pollution--

MR. REED: Yes.

MR. SHERMAN: --the logical problems, and so on--

MR. REED: Yes, sir.

MR. SHERMAN: --because that is the main purpose of my being here--

MR. REED: That is exactly why Chapter 4(f) was written.

MR. SHERMAN: --not to have you help us fight the road.

MR. REED: No,Chapter 4(f) of the Department of Transportation rulebook is specifically written to give you as a private citizen the right to object to the alignment of a road for ecological considerations, environmental considerations, and you should actively pursue that recourse which is available to you underneath the law.

MR. SHERMAN: And you feel that I would be out of order in presenting this to this Board?

MR. REED: Not out of order, sir, but it is out of the purview of this conference.

MR. SHERMAN: I see. Well, I thought based on the facts that you gentlemen could not help but feel that this is not the route, because of pollution problems, and so on.

MR. REED: No, it will come back to our attention, Mr. Sherman. When the objection is filed, it comes across our desk both at Tallahassee and at Atlanta for our comment as it goes up the line in the chain of command underneath the Chapter 4(f).

MR. SHERMAN: I understand.

MR. REED: And I would urge you and the Association to familiarize yourself and it is your right, sir, to ask the Director of the Florida State Department of Transportation for a copy of Chapter 4(f) and to give you the assistance in filling out an objection application to the ruling of this road. This is within the concept of the law and is well set up. And many other areas have taken objections right to the Secretary's desk and this is where--with appurtenant State and Federal comments at a lower level.

MR. SHERMAN: All right, sir. Thank you for your time. I am sorry if I have taken up your time.

MR. REED: No, sir, I was delighted to help you on this, because--

MR. SHERMAN: I appreciate the information.

MR. REED: --a Chapter 4(f) hearing is something that is very serious in the United States right now and is taken very seriously and you have that right available to you, sir.

MR. SHERMAN: Thank you very much.

MR. REED: I am sorry, I can't read the last name. It appears to be George Jeans, Septic Tank Contractor, Browning Septic Tank Company. Is it Jeans?

MR. JEANS: Yes.

GEORGE JEANS
BROWNING SEPTIC TANK COMPANY
HIALEAH, FLORIDA

MR. JEANS: Mr. Chairman, members of the Board.

My name is George Jeans. I put down there that I was a septic tank contractor, which will be obvious when I get through talking. I also represent in part the Dade County Drainage Association.

I come here also as a concerned individual. I want to assure you that there is no conflict of interest whatsoever in my statements. You are talking somewhere about the year 2000 of having the sewerage treatment taken care of; you mentioned something about Lake Okeechobee being raised some four foot in order to take care of the water needs of this area.

I don't think that you have quite thought this out. I think that by the year 2000 Lake Okeechobee will have to be raised something like eight or ten foot, which is a little bit stupid even to consider. At the rate right now as our present connect-up from septic tanks to sewerage treatment plants and the outfall going out into the ocean, which is lost water which we will never get back, from the underground is tremendous. As Mr. Quina already stated, you have an intrusion of salt water on North Miami Beach; the wells are being contaminated, and not by anything but salt water.

We are lowering our water table. When you lower your water table there is two things happen, surface water goes down into the ground, which no one has mentioned. even our Audubon Society, about draining the Everglades.

I wish you would consider this very seriously. You are draining the Everglades and you will continue to drain the Everglades even if you dig wells deep and recycle your water from your treatment plants going deep, you will still be draining it and this is something that is very serious.

Now, you are talking about overworked treatment plants. Overworked treatment plants, they are being overworked for one reason, that you are going on sewage and running the sewage that used to be going into the ground, the recycle of water in the septic tank, you are running that out through these treatment plants.

There is no place in the whole county, for that matter in the State, that any properly installed septic tank is showing any or has polluted any area, any water. The Dade County Drainage Association has on record test results made by a testing laboratory of water from wells throughout the county, not one of which has shown any fecal contamination whatsoever.

I would like to say that through the pollution control and a lot of people have been talking about this, they talk about E. coli. E. coli will come up anywhere, not in a stream that is supposedly contaminated by septic tanks, which can't be proved. E. coli is out in the Everglades. E. coli is simply a bacteria that states that something is rotting. That doesn't mean that there is fecal contamination there.

Some comment was made about the oxidation, a new treatment of final treatment in your sewerage treatment plants. Now, if this was so new, I would like to inform these people that a septic tank does treat its individual homes or whatever it is by the air going through the--what I am trying to say, the word doesn't hit me--anyhow, the air going through working wells will start to purify the bacteria that is going out of your septic tank.

G. Jeans

Now, people have talked about septic tanks again being polluted. I will make an offer. As further proof, I will dig a well on any properly-installed septic tank in Dade County 10 foot away from the drain field and I will drink the water, I will put it up for a test.

What I am trying to say, gentlemen, is that we have gotten the horse in back of the cart or the cart before the horse. I think that if you gentlemen and the government would like to spend some money, we would like to have you come down here and give us a water plant, we would like to have government water, we would like to have water all over the area. This is something that we need. We don't need to make waves about our contamination from septic tanks. There has never been any. You can't prove it. The only time that contamination from a septic tank has been shown is where one has overflowed. Well, gentlemen, if you think that a sewer when it stops up and somebody opens the trap and that will not contaminate, you are wrong.

Now, I would like to reemphasize that the water that does go through a septic tank system through a drain field does go back into your subsurface water. This is recycling. It is done naturally and there is no sense of spending millions and millions of dollars to do this.

Now, I am for pollution control 100 percent. I think that if we enforce the laws that we have and went up and down the river and stopped the pollution of industrial places dumping their industrial wastes into the river, the overflow, overspill of oil, and in a lot of cases where sewers direct from a house are going into the waterways, this is pollution and this can be corrected simply by enforcing existing laws that we have. Putting in a complete sewerage system throughout the county is not going to do this. It will just simply cause more overwork or more burden on the overworked sewerage treatment plants that we now have.

Gentlemen, I would like to have you consider these things and I would like to invite you all to My Lady Fair, which is going to start on March 19. I wish you would write it down and come. We have a display and we will show you what pollution control is and what it should do in a county such as this.

MR. REED: Thank you, Mr. Jeans. I am sure anybody who is available on March 19 will be delighted to accept your offer.

Does anybody have a question?

Thank you, Mr. Jeans. We are deeply concerned with recycling and removing the water from the waterways and from the aquifer in Dade County, and I guarantee you we will give that our utmost consideration.

Mr. Bernard Janis, Builders Association of Florida.

B. Janis

BERNARD JANIS

FLORIDA HOME BUILDERS ASSOCIATION

MIAMI, FLORIDA

MR. JANIS: Mr. Chairman, gentlemen.

My name is Bernard Janis. I represent the Florida Home Builders Association and the Builders Association of South Florida.

We are the people who are faced with the problem of providing shelter for the thousands including low and middle income families during 1971. If our utility plants which are now properly operating are not permitted to expand because they are not permitted to discharge the effluent into the canal system, we cannot provide this housing. We are depriving thousands of people of owning or living in a home of their own. We are possibly opening Pandora's Box which might result in the so-called long hot summers that are prevalent in the ghetto areas of many cities in our country.

This need to house our people can be made compatible with the objectives of this conference and we ask a relaxation on the time for the properly operating plants to halt the discharge into these canals.

I have been building homes and apartments in Florida for some 20 years. At that time we were all building on septic tanks. Fifteen years ago we started constructing utility plants.

Since local or Federal Government was not prepared to spend the money on utility plants, we developers were forced to construct our own utility plants if we wanted to provide the necessary housing. We would like nothing better than to have local government provide all the sewage treatment by constructing ocean outfalls with tertiary treatments. However, this is going to take years to accomplish. In the meanwhile, economically we still have to depend on discharge of the treated effluent into local canals.

In summary, we urge you to give consideration to these people of our society who have not yet had the opportunity of owning or occupying their own home or apartment. We recognize that we must build in a clean environment, but we also believe that we must be given a reasonable time to accomplish this objective. We believe that expansion of these existing plants under the standards of the State pollution control department is essential to our society and we urge you to let Dade County delete that portion of their action plan which calls for a halt in the expansion of existing plants when they discharge into these inland waterways.

A previous speaker has urged a halt on building permits in this area. Gentlemen, I am afraid that is pretty hard to convince the construction worker who has to buy groceries for his family of five that he no longer has a job because government has been too harsh in enforcing its new standards.

Thank you.

MR. REED: I am not sure I agree with every word of that, Mr. Janis, but I certainly will take your remarks very seriously.

MR. JANIS: Thank you, Mr. Reed.

MR. REED: And the concluding one is Mr. Norman Landau, lawyer, who is counsel to the Interstate Sanitation Commission.

Mr. Landau.

NORMAN LANDAU

ATTORNEY, INTERSTATE SANITATION COMMISSION

NEW YORK CITY, NEW YORK

MR. LANDAU: Thank you, Mr. Chairman. I will take but two minutes.

The prior speaker mentioned Greenwich, Connecticut. One of the litigations we had involved Greenwich. They built a multi-million dollar plant with the latest equipment and when the tide was wrong it wasn't worth a thing, because in Port Chester, right across the Long Island Sound, they hadn't done their work, hadn't complied with the requirements, and when, as I say, the tide changed everything swept up onto Greenwich. So an action was brought for injunctive relief and by their own tests, by their own engineer's tests, Port Chester didn't comply with the regulations of the Interstate Sanitation Commission and so they were found to be in violation, an injunction issued, but I can tell you that it has not been complied with. As you mentioned earlier, voluntary compliance is the key to solving the problem.

Most towns do voluntarily comply, but Port Chester's story is brief and sad. It took so long to process the application for funds from the Federal Government that by the time they started the application when primary treatment was the only requirement and by the time the funds were acted on, the application, rather, for funds was acted on, secondary treatment was required. So that there was a hardship really imposed on Port Chester because they spent their money on something in good faith, it seems to me, even though we were suing them, and by the time they completed it it was already obsolete.

The simple points I want to make are these.

1. Your water pollution control will be as good as your weakest link on a common body of water. We have learned that the hard way; goodness knows that Greenwich has.

MR. REED: Yes.

MR. LANDAU: So if Port Chester doesn't comply, Greenwich's work is meaningless.

Secondly, enforcement. If you are going to have something that is too severe it is not going to be complied with--the old thing about chopping the boy's hand off for stealing penny candy. If it is going to be injunctive relief against a whole town, you can get your order. We have got them against Port Chester; we have got them against Brook Haven; we have got them against Port Chester Sewer District; and I am here to tell you they are not being complied with. So some enforceable penalty to facilitate compliance is required.

The best treatise on moratorium, which an earlier speaker mentioned as well as Greenwich, Connecticut, is Professor Gene Sach's book on Defending the Environment, which I recommend.

Finally an embargo was mentioned, and that is what the Attorney General has brought, against houses that don't demonstrate not only if the house is built correctly and can stand up and not fall down but that it can tie into adequate sewage treatment facilities, and an embargo has been placed on certain homes in Riverdale, New York, for that.

Finally, if I may, I would like to send you a copy of the Public Health Law 12-99, which we find is helpful in some respects, and I certainly think that you all are to be commended and I wish you luck in your effort.

MR. REED: Thank you, Mr. Landau. I certainly appreciated those remarks. As a former resident of Greenwich, Connecticut, I am deeply and acutely aware, especially living on the Long Island Sound for a number of years, of Port Chester's sewage problems. (Laughter.)

Mr. White, that concludes any of the Florida delegation, unless there is anyone else in the room who wishes at this time to speak.

If not--

MR. BALJET: Mr. Reed.

MR. REED: Yes, Mr. Baljet.

MR. BALJET: Mr. Reed, this pertains to the boat ordinance. Commissioner Greene had to leave, but before he left he requested that I throw this in to get guidance from the conferees regarding are you in favor of first enacting this particular ordinance that we are now proposing or would you prefer that Dade County delay this until the Federal people have come up with theirs?

MR. REED: Let me say this, Mr. Baljet. I certainly would not like to answer that question full steam ahead. I will give you a qualified answer.

This is a local ordinance and if there are adequate votes to pass this ordinance I see no reason why Dade County can't take this course of action. For myself, before I go to the Board to promulgate a Statewide rule, I will look with interest upon the minimum standards established by the Federal Government in conjunction with the States following the hearing the 26th of this month. Personally I would want to wait, from the State's standpoint. However, not in any way do I wish to deter local action on what I would consider a more stringent rule than possibly will come out of the Federal meeting.

MR. BALJET: Thank you.

MR. TRAINA: Mr. Baljet, I would speak from the Federal standpoint. I think regulations and rules can always be modified later. I would like to see Dade County go ahead and adopt this if they can.

MR. BALJET: I appreciate this--

MR. WHITE: I would like to add a statement. I see no reason for delaying it as long as you are fully aware of the circumstances that may be necessary to amend parts of it in the very near future.

MR. BALJET: Thank you, Mr. Chairman.

MR. REED: With that, Mr. White, I return the meeting to you.

MR. WHITE: Thank you, Mr. Reed.

I would like to go off the record very briefly with the conferees now to decide on a time when we can report back to you with our findings.

Off the record.

(Off the record.)

MR. WHITE: I think the conferees have agreed that we will retire to a meeting room in executive session and report back to those of you who are interested at 1:30 here in this room.

With that, the meeting is temporarily adjourned.

(NOON RECESS)

AFTERNOON SESSION

FRIDAY, FEBRUARY 19, 1971

MR. WHITE: If we may, let's reconvene, please.

First I would like to apologize for being tardy. As is the custom when you are under pressure sometimes, we underestimate the magnitude of the job. But we did work from the time we left until we got back.

MR. REED: And haven't eaten.

MR. WHITE: And haven't eaten, as Mr. Reed says.

And I would like to briefly remark concerning the procedure that we follow in developing these recommendations.

First I will read the conclusions and recommendations of the conferees and I will give the conferees an opportunity to comment or make any statement or modifications after that. Then we will adjourn the conference.

I might point out that we will have copies of the conclusions and recommendations available to the press and to as much of the public as we can provide for. I don't know exactly how many copies we will have, but they will be down in a very few minutes.

I would also like to point out that the conclusions and recommendations were developed somewhat hastily and that the final draft might clean up some of the verbiage that we have left scattered around, but the substantive recommendations will go forward as they appear here and will be read.

Conclusions and Recommendations

The conferees representing the State of Florida and the Environmental Protection Agency unanimously agree on the following changes and modifications of the conclusions and recommendations of the first session of the conference held on October 22, 1970.

Recommendations 1, 2, 3, 5, 6 and 11 remain unchanged.

The recommendations which were modified are as follows:

4. The Metropolitan Dade County Commission's interim reports on the development of an updated master plan for Dade County to the conferees on 18 and 19 February 1971 indicate general progress. On April 13, 1971, the County Manager's Office will bring an interim progress report to the attention of the conferees. A report on the upgrading and expansion of the Virginia Key plant will also be furnished to the conferees by April 13, 1971.

7. The Metropolitan Dade County Commission's response to Recommendation 7 concerning building and occupancy permit approval is vague and nonconclusive. To insure compliance with the recommendation, the conferees require interim reports from the Dade County Pollution Control Officer. The first report is to be furnished by April 13, 1971, as to progress and problems in this vital area of concern and bi-monthly thereafter.

8. Additional waste discharges to Lower Biscayne Bay, including the Biscayne National Monument and its tributaries,

shall be prohibited. The same prohibition shall apply to discharges to canals in Dade County which drain to the Everglades National Park. Removal of existing municipal and industrial waste discharges from these waters shall be accomplished as rapidly as possible but not later than January 1, 1974. The conferees recognize technical problems associated with Recommendation 8. The city of Homestead should instruct its engineers to prepare feasibility studies on disposal of treated waste effluent to the subsurface through deep well injection. Other alternatives should also be considered with the Department of Air and Water Pollution Control.

The county will actively pursue a demonstration grant for the Perrine-Goulds plant to evaluate the feasibility of a recharge system.

The county in cooperation with the U. S. Geological Survey and the Environmental Protection Agency should actively monitor the General Waterworks deep well system at their Snapper Creek plant. The information obtained from the operation of this deep well injection system will be a fundamental guidance to the disposal of treated wastes in Dade County and should be made available to the conferees on a bi-monthly basis beginning April 13, 1971.

9. All wastes from vessels used as domiciles or business establishments shall be discharged to on-shore

Conclusions and Recommendations

facilities. However, the conferees take cognizance of regulations controlling such discharges which are currently being developed by the Environmental Protection Agency and will modify this provision accordingly when the regulations become effective.

The Corps of Engineers is requested to report to the conferees by April 13, 1971, on its program for continuing the removal of abandoned hulks, debris and other obstructions to navigation in the Miami River.

10. Based on the inventory completed to date the following wastewater treatment plants must be cited as being in violation of State and county standards.

Riverdale Estates, Andover Subdivision, Doral Country Club, Miami Lakes Utilities, Southern Estates Utilities, Leisure City Utilities, Peninsular Utilities, Carol City Utilities, Community Utilities, Atomic Sewerage, South Miami Heights, Little Abner's Trailer Park, Pan American Hospital.

The Dade County Pollution Control Officer will report back to the conferees on remedial action taken toward compliance with State and county standards by April 13, 1971. Additionally the Water Quality Office will continue its inventory and analyses of both municipal and industrial waste sources and will give a final report with recommendations to the conferees by April 13, 1971.

That concludes the revisions of the recommendations.

Are there any comments by the conferees?

Mr. Reed.

MR. REED: Representing the State of Florida I concur with each of the modified recommendations as read by Mr. White.

MR. WHITE: Thank you.

MR. TRAINA: I have no comments.

MR. WHITE: Are there any other comments or observations, Mr. Reed?

MR. REED: No.

MR. WHITE: I would like to take this opportunity to thank the County Manager, Commissioners, and Mr. Carter for providing these meeting facilities for us today. And I might say that we might want to call on you again if you will be so inclined for future meetings of the conferees.

MR. CARTER: Fine.

MR. WHITE: With that, the conference stands adjourned.

(ADJOURNMENT)

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